# N.A.A. BULLETIN

*April 1959*

*In 2 Sections*
*Section 1*

## The Making of Management Accountants

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## Operating Results for Employee Information

•

## Standard Costs in Financial Statements

# N.A.A. BULLETIN

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## CORRECTIONS

Two omissions from printer's copy of "A Proposal for Dual Pricing of Intra-Company Transfers" by Allan R. Drebin (*N.A.A. Bulletin*, February 1959, page 54, first full paragraph) affect the intended meaning. The first two sentences of this paragraph, as corrected, should read (words which were omitted are italicized):

"Sales *minus* is a fourth procedure for pricing transfers. Its logical basis is that a method under which the price of an intermediate product is *set at the price of the final product, less costs of completion and* normal profit to subsequent divisions will cause the selling division to sell to the buying division when it is in the best interests of the company to do so."

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Through inadvertence, pages 91 and 92 of the February issue of the *N.A.A. Bulletin* consisted substantially of initial paragraphs of Chapter XVII, "Budgets," of *Standard Costs for Manufacturing* by Stanley B. Henrici, Second Edition, 1953, McGraw-Hill Book Co. We take pleasure in attributing this material correctly.

# *Standard Costs in Financial Statements — Theory and Practice*

by STEPHEN A. ZEFF

STANDARD COSTS were first used intensively in American industry shortly after the first world war when the absence of government-supported demand precipitated a slump in business activity. In order to survive, businesses had to tighten their cost belts. A more rigorous attention to costs was axiomatic. At about the same time, in 1919, a group of some 100 engineers and accountants founded the National Association of Cost Accountants. The N. A. C. A. (now N. A. A.) provided the needed forum for the discussion of cost matters. Thus, both standard costs and the N. A. A. became important to American industry at the same time. It is also true that the subject of standard costs has been one of the most frequently-debated issues in publications and annual meetings of the association. Much has been written in the *Bulletin* and other publications about the control value of standard costs.

Most writers on the subject of standard costs for control purposes assume without apparent question that standard costs are proper raw materials for bookkeeping entries and, more importantly, financial statements. A casual reader in this area would likely infer from the seeming unanimity among cost accounting writers that it is generally agreed among financial accountants as well that this is proper practice. This inference will inevitably lead the reader to draw a more fundamental conclusion: that standard costs are proper costs for the valuation of assets[1] and, conjointly, the determination of net income.

Are these sound inferences? If they are not, may the use of standard costs in the books and financial statements[2] nevertheless be justified? These two lines

[1] This paper restricts the scope of discussion to inventories, which is the asset category most affected by the booking of standard costs. Another category would be fixed assets manufactured by the user.

[2] As will be pointed out later, the real problem consists of the recognition of standard costs in *financial statements*. The mere booking is not important, for period-end adjusting entries can erase the effects of during-the-year book entries. Hereinafter, "booking" will also imply recognition in the financial statements.

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of inquiry deserve critical investigation. It is, therefore, the purpose of this paper to enlarge upon these problems in order that the use of standard costs in the financial statements may be accepted or rejected.

In order to answer the first question—the soundness of the two inferences—attention will be centered primarily on the theoretical plane of argument. Consideration of practical and expedient lines of argument will also be introduced. This is not to say that practical matters are of no importance; it is intended only to isolate as well as possible, and so study, the theoretical aspects. The second question, on the other hand, will involve only a discussion of practical matters.

### Theoretical Side — Some Contrasting Views

An important goal of cost accounting is cost control. The chief aim of financial accounting is income determination. In themselves, these goals do not conflict. Both goals imply the use of one common tool: cost bookkeeping. To the financial accountant, cost bookkeeping is one phase of the record-keeping process which ultimately leads to the preparation of financial statements. To the cost accountant, cost bookkeeping may consist of the formalization of information which is useful for cost control. An essential requisite of effective cost control is some norm against which management can measure the results of actual operations. The norm is identified as a standard or, more appropriately, a standard cost.[3] Variances between standard costs and actual costs are analyzed as to cause use in order that future operations might approach or meet the standards. Cost accountants have learned, moreover, that at least two advantages may be realized by using standard costs in cost bookkeeping:

1. *Bookkeeping costs can be reduced*—Since the "life" of a standard cost is much longer than that of an actual cost (the latter is different for each job or process run), entries can be made without constantly re-computing costs.
2. *Executives will take standard costs and variances more seriously*—If cost control is to have any teeth, executives must give full support to the reduction of variances between standard costs and

[3] "The term 'standard cost' is a grievous misnomer. Whatever may be the true character of the things called by that name, they are certainly not 'costs'." John B. Canning, *The Economics of Accountancy*, Ronald Press, 1929. p. 271, n. 8. A standard cost is certainly not an economic cost. For the sake of convenience, however, it will be referred to as "standard cost" in this paper. See also Cyril F. Gamber, "The Relationship Between Standard and Actual Costs," *N. A. C. A. Bulletin*, April 1, 1946, p. 674.

actual costs. It has been found that executives will be more responsive to cost reduction if the standard costs, and thus the variances, are entered in the accounts.[4]

(To be sure, cost accountants have also presented arguments of philosophical as well as practical value as to why standard costs should be booked. These arguments are more profitably revealed at a later stage in the discussion.)

Changes in bookkeeping procedures necessarily attract the attention of financial accountants, for the bookkeeping entries are the starting points along the road toward the preparation of financial statements. Because Advantage 2 above, implies that the standard costs should be carried into the statements, the financial accountant is inescapably involved in the standard cost problem: in the books or not? If all the cost accountant wished were bookkeeping entries based on standard costs without their recognition in the statements, the financial accountant could employ the expedient of adjusting entries to rid the accounts of the extraneous (standard cost) data. But here cost accounting has intruded upon financial accounting, and one side must give in. There is no compromise on principles.

In order to understand more fully the position of financial accounting, it is desirable to examine the related view of the nature of income determination. The income statement is the meeting place for the revenue and expense of a given fiscal period. Total revenue represents revenue attributable to operations of the period, expressed in actual dollars—dollars agreed upon by the seller and buyers. The expenses, though they cannot always be unquestionably identified with the revenue of a certain period, are ideally also expressed in actual dollars[5]—dollars agreed upon by the buyer and sellers. The difference between total revenue and total expense is either net income or net loss for the fiscal period. Although the financial accountant must concede that this matching process is not perfect, i.e., it is usually impossible to "pin" each item of expense on a certain item of revenue, he can, none the less, maintain that the netted figure is homogeneous. Everything is expressed in actual, or bargained, dollars.

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[4] Henry W. Maynard, "The Accounting Technique for Standard Costs," *N. A. C. A. Bulletin*, February 15, 1927, p. 562. Advantage 2 is of much lesser significance today than in 1927, when Maynard wrote. It may be updated by substituting "statements" for "accounts." It should also be noted that cost accountants have described standard costs as the only *true* costs. See *infra*, note 24.

[5] It is to be noted, however, that there is strong support for some deviations from actual cost. See the next paragraph and note 7, *infra*.

Because the consumption of non-cash assets is a significant determinant of net income (via costs), it is important to proper income determination that assets be valued in harmony with the cost theory. Although in the last few decades such expediencies as "cost or market, whichever is lower," for inventories and marketable securities, and recognition of appreciation of fixed assets[6] have been evidenced, the fundamental principle of "actual cost" prevails. It is noteworthy that the deviations have not been accepted by many leading writers in financial accounting.[7]

### *Different Kinds of Standard Costs*

In order to get down to the basic argument, it is first necessary to examine the kinds of standard costs, for different kinds will have different effects on the financial statement. Two major classifications of standard costs are basic and current. Basic standards are those which are not changed unless there are important alterations in the nature of sequence or manufacturing operations. Current standards are those which undergo periodic revision in order to reflect changes in methods and prices. Basic standards are, therefore, useful for long-run analyses of variances, while current standards are more suited to short-run analyses. There seems to be general agreement among cost accountants that, if standard costs are to be booked, they must be current.[8] After a short period of time has elapsed, basic standards are no longer realistic in view of technological and price-level changes. Thus, if financial statements are to reflect reality at all, basic standards are of no value for them.

In addition, current and basic standard costs may be set at different levels

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[6] Whether the carrying value of fixed assets should be written up to current prices depends on the nature of the price rise. A change in price level might justify accounting recognition thereof if precautions are taken to identify clearly the character of the write-up. But the accounting recognition of changes in price *structure*, as contrasted with the price *level*, is not to be condoned generally.

[7] Objections to the upward revision of fixed asset account balances are numerous. The more widely-accepted "cost or market, whichever is lower," is frowned upon by Henry Rand Hatfield, *Accounting: Its Principles and Problems*, D. Appleton & Company, 1927, p. 99; Perry Mason, see his dissent in *Restatement and Revision of Accounting Research Bulletins*, American Institute of Accountants, 1953, p. 35; and W. A. Paton and A. C. Littleton, *An Introduction to Corporate Accounting Standards*, American Accounting Association, 1940, p. 81.

[8] Walter B. McFarland, "The Basic Theory of Standard Costs," *Accounting Review*, June, 1939, p. 152 and Gamber, op. cit., p. 677.

Standard costs may reflect expected actual costs, average-capacity costs, practical-capacity or ideal costs. Expected actual costs resemble budgeted figures in that an attempt is made to forecast the results of future operations. Because expected actual costs anticipate and allow for inefficiencies and waste, they are not very useful standard costs for control purposes. Average-capacity costs, or standard costs at average capacity, are intended to level out seasonal and cyclical fluctuations. Standard costs under this plan are set at attainable levels. Practical-capacity costs represent activity at a theoretical maximum, reduced by unavoidable delays. As such, they provide an attainable and vigorous standard for control purposes. Ideal standard costs are the costs at theoretical capacity of the plant. As such, they are unattainable, for they do not allow for inefficiencies of any sort.

Standard costs help facilitate cost control by focusing attention on operational inefficiencies. For cost control purposes, therefore, standard costs must be substantially or completely free of inefficiencies which the computation of variances should uncover. Standard costs are consequently most useful for cost control purposes when they are "tight," or when inefficiencies have been "squeezed out" of them. In terms of the levels enumerated above, standard costs for control purposes might best be structured on the practical-capacity idea in order to emphasize the deviations from the "efficient" norm.

### *The Basic Issue: A Conflict of Interests*

Thus far, standard costs have been shown to be best for day-to-day cost control if they are current and tight. Are those characteristics consistent with those which financial accountants ascribe to costs for financial statement purposes? This question will be answered from the standpoint of pure financial accounting theory and financial accounting theory as interpreted by practitioners.

In terms of pure financial accounting theory, the answer is clearly "no." There is no substitute for actual costs. Ideally, the income statement is composed solely of actual revenues and actual costs.[9] The case for actual costs may be expressed in this fashion. An income statement purports to show the results of actual operations. Revenue is an actual sum evidenced by sales tickets. It would be inconsistent to charge against this revenue an expense total which

[9] In effect this means that variances from standard costs may be reported as expense in the period during which the merchandise to which they pertain is sold. The argument here is against showing the variances as expense in the period when the related production operations take place. That is, variances are inventoriable costs.

assumes some efficiency "ideal," i.e., any efficiency standard other than the actually-achieved efficiency. If expenses are represented by an amount which *would* have been incurred in accordance with a prescribed efficiency standard, it follows that revenue should be stated at an "ideal" volume multiplied by an "ideal" sales price. Then the income statement would resemble a whole budget, rather than half-results and half-budget. Is the income statement to be an operations summary or a restatement of a kind of budget? Is the object of financial accounting to arrive at an efficient net income? The answer to this last question is "no."

As regards "financial accounting theory as interpreted by practitioners," it is useful first to discuss the "current" and "basic" characteristics separately. Financial accountants would agree with cost accountants that, as between current and basic costs, the former are certainly preferable. Underlying the financial accounting principles of actual cost is the desire to be as up-to-date with present realities as is possible. Current standard costs follow the same guide.

If we ignore the materials usage variance, the following interesting analysis can be made with respect to raw materials inventory. "First-in, first-out" enthusiasts who also appreciate the conservatism of "cost or market, whichever is lower," would welcome current standard costs. In periods of falling prices, standard cost—because of time lags between adjustment to new, lower prices —will be somewhat higher than actual cost. As a result, the ending inventory at standard cost will appear in the accounts, before adjustment to market, at an amount somewhat above actual cost. There is no problem here, for the adjustment to market will eliminate the disparity. But in periods of rising prices, the standard costs will be somewhat lower, due to time lags between upward adjustments, than actual costs. Thus, the ending inventory will appear in the accounts at an amount somewhat below actual cost! Market price will be higher and no adjustment will take place. The latter instance illustrates how standard costs can contribute to the conservatism so cherished by many financial accountants.[10]

"Last-in, first-out" proponents, because of the above reasons, would also prefer current standard costs when prices are rising. For, in this instance, ending inventory cost at standard—somewhat lower than actual cost because of time lags between adjutments—will increase the cost of goods sold and thereby produce a more conservative profit.

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[10] This is not to condone conservatism for the sake of conservatism. It must be remembered that the attempt is made here to reconcile standard costs with generally-practiced accounting, i.e., financial accounting theory together with generally accepted deviations therefrom, or "financial accounting theory as interpreted by practitioners."

In periods of either sustained rising or falling prices, average cost proponents will find smaller differences between standard cost and actual cost than is true in the instances above. (The magnitude of the difference between standard cost and actual cost has not been discussed above, for it is the subject of the next section.)

As to tight standard costs, these underscore the fact that standard costs represent conditions as they should be or, in the past tense, as they should have been. Financial accounting wants costs as they were. It would not be out of the question, however, for financial accountants to accept standard costs if the differences between standards costs and actual costs were small (immaterial). But are the differences small?

To meet the wishes of practicing financial accountants, standard costs should be set at a level somewhere between expected actual and average-capacity costs, defined above. In this way, the standard costs would approach actual costs. But herein lies the basic disharmony between standard costs for control purposes and standard costs for financial reporting purposes. Cost control needs tight standards and financial accounting would want realistic standards. Both ends cannot be served by the same standards. Standard costs are inevitably either a poor cost control device or a poor income determination (inventory valuation) procedure. But this apparently hopeless conflict does not shut the door entirely on some use of standard costs for financial accounting purposes. However, before this exception is introduced and examined, it is well to gain a perspective by observing what some leading accounting writers think on this controversy.

### Philosophies of Leading Writers

Paton and Littleton in their monograph, *An Introduction to Corporate Accounting Standards,* write, "no substantial objection can be offered to the computation of standard costs and the compilation of these costs in any helpful manner, provided the periodic income statement, as finally presented, is based upon actual costs rather than upon hypothetical charges."[11] This view reflects the pure financial accounting theory.

In his fourth edition (1927), Montgomery makes this statement: "For inventory purposes 'standard' costs should not be used without thoroughly testing the cost procedure to see that such costs are reasonable and may properly be considered actual."[12] But two editions and 13 years later, he explains his posi-

[11] *Op. cit.,* p. 121

[12] Robert H. Montgomery, *Auditing Theory and Practice,* Ronald Press, 1927, p. 160.

tion differently: all variances save idle capacity should be apportioned to the ending inventory. In defense of this position, Montgomery states: "With respect to the manufacturing overhead application, it is now recognized that the cost of production should bear depreciation in respect of only those facilities which are considered necessary to current operations."[13] The effect of this apportionment is to convert standard costs to actual costs, in the aggregate. Morton Backer writes:

> "Unless the effect on inventories is relatively insignificant, the variances from standard should be apportioned between cost of goods sold, work in process and completed but unsold inventories in a manner similar to the suggested treatment for over- or under-absorbed overhead."[14]

The American Institute of Certified Public Accountants, in its "restatement" bulletin, carefully identifies standard costs as "approximate" costs, as follows:

> "Standard costs are acceptable if adjusted at reasonable intervals to reflect current conditions so that at the balance-sheet date standard costs reasonably approximate costs computed under one of the recognized bases. In such cases descriptive language should be used which will express this relationship, as, for instance, 'approximate costs determined on the first-in, first-out basis,' or, if it is desired to mention standard costs, 'at standard costs, approximating average costs.' "[15]

It should be noted, furthermore, that standard costs are not a "recognized base."

The views of two prominent cost accountants are also of interest. Blocker suggests that each variance from standard be first analyzed before the financial accountant makes a decision regarding its disposition. With material and labor variances, he states that the portion of the variance which was beyond the control of management be prorated between the inventory and profit and loss accounts. The controllable portion should be sent directly to profit and loss. In the case of overhead variances, a different treatment is proposed. Blocker

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[13] Robert H. Montgomery, *Auditing Theory and Practice*, Ronald Press, 1940, p. 163. What about the depreciation element in other fixed overhead variances?

[14] "Determination and Measurement of Business Income by Accountants" in Morton Backer, editor, *Handbook of Modern Accounting Theory*, Prentice-Hall, 1955, p. 233.

[15] *Op. cit.*, p. 30, n. 3.

maintains that variances which are due to seasonal fluctuations should be deferred until they are offset by future fluctuations. If the variances represent inefficiencies or savings from the standard, they should be sent to profit and loss. Variances due to improperly-prepared standards should be prorated between inventories and profit and loss.[16] This procedure seems simple and clear-cut "on paper" but it is seriously doubted that such fine distinctions can be made in practice. Nickerson recommends, however, that overhead should be carried to the inventories at standard cost, whereas materials and labor should best be shown at actual costs. This treatment presents a "clearer picture of operations, as well as conservative valuation. . . ."[17]

Montgomery's view is preferred by this writer. Materials, direct labor, and variable overhead are functions of activity. The presence of these costs, in all but extreme cases, supports the presumption that goods are being turned out. Marginal costs are the reflection of marginal product. As such, these costs should be identified with the net product which has caused their incurrence. The activity variance, or cost of idle capacity, stands for the cost of fixed plant facilities which were *not* utilized in the turning out of products.

It is as though a company owned two factories, and one was used at 100 per cent of capacity and the other was not used at all. The fact that one factory, or one segment of fixed plant facilities, was not used, does not change the cost required to turn out the products which were manufactured elsewhere. The cost of idle capacity is clearly a waste of fixed facilities which, during the fiscal period, were not a part of the company's productive assets. If these facilities are truly fixed, i.e., the length of their aggregate lives is a function of *time*, not *use*, that portion of their cost identified with this fiscal period (depreciation, insurance, taxes) is a loss in this period and, in no sense, is this cost identifiable with future periods by way of inventories. As was said above, the fixed plant facilities were unproductive assets for 100 per cent of the time; their cost is, therefore, a 100 per cent loss chargeable to the operations of the current period.

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[16] John G. Blocker, "Mismatching of Costs and Revenues," in William E. Thomas, editor, *Readings in Cost Accounting, Budgeting, and Control*, Southwestern Publishing Co., 1955, p. 252-53.

[17] Clarence B. Nickerson, "Application of the Cost or Market Rule to a Woolen Company" in the *Control and Valuation of Inventories*, National Association of Cost Accountants, 1941, p. 217. Nickerson's proposal probably extends beyond the woolen industry, for he writes, " Though the practices of this woolen company serve as a specific example, many of the matters considered are equally applicable to other manufacturing enterprises." *Ibid.*, 209.

The other fixed overhead variances represent, for the most part, inefficiencies associated with fixed plant facilities which were used. Although the line of distinction is not so clear here as it was above, it seems best to identify these variances with the product, because they are due to efficiencies or inefficiencies in using the facilities. The facilities were used for the turning out of the products; therefore, the products should bear the actual cost of using these facilities. Similarly, loss of materials due to theft or destruction should be charged to the current period's operations. In general, production costs are inventoriable unless they expired without having a proximate relation to the turning out of the product.

In summary, "financial accounting as interpreted by practitioners" should observe actual cost as far as practicable,[18] except that the inventory cost should be reduced by the costs which expired "outside" of the productive process.

### *The Practical Side*

Although the above recommendation lends most support to actual costs, it is not uncommon to find companies which value inventories at standard cost. This suggests that there must be one or more practical justifications, as opposed to the theoretical objections, for using standard costs for inventory valuation. The remaining discussion will present evidence that standard costs are being employed for inventory valuation today and attempt to infer the justifications which prompt this practice.

That the A. I. C. P. A. has taken a position on the treatment of standard costs for inventory purposes is testimony that standard costs are often used in financial statements.[19] Both the Finney-Miller and Karrenbrock-Simons intermediate textbooks report that expected actual, normal, and ideal standard costs are frequently used for inventory pricing.[20] A 1947 N. A. C. A. questionnaire survey revealed that, of 65 companies which used standard costs and treated

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[18] Whether the use of actual costs is practicable is usually the controlling factor in deciding if they will be relied upon. This matter is the subject of the next section of this article, "The Practical Side."

[19] Restatement," *loc. cit.*

[20] H. A. Finney and Herbert E. Miller, *Principles of Accounting: Intermediate*, Prentice-Hall, 1958, pp. 229-30. Wilbert E. Karrenbrock and Harry Simons, *Intermediate Accounting*, Southwestern Publishing Company, 1958, comprehensive volume, p. 247-8.

all of the different material and labor variances alike in the accounts, 54 firms closed these variances to cost of goods sold. Of 127 companies which used predetermined overhead rates, approximately eighty per cent closed both under- and overabsorbed overhead variances to cost of goods sold.[21] This evidence indicates apparent widespread usage of standard costs for inventories valuation, but why is this done? Although no one seems to have shown that the standard costs which are today being used for inventories are also being used for cost control, it is likely that this is true.

Two reasons which were given by companies which closed material and labor variances to cost of goods sold were:

1. "Variances represent costs of waste and inefficiency and, as such, should be excluded from cost of goods manufactured.
2. "Standard costs give more conservative inventory valuations since they eliminate the effects of excess prices and inefficiencies from inventories."[22]

One important reason, given above, cites the increased managerial attention shown to cost control when standard costs, and thus variances, appear in the statements.[23]

There are probably two additional, and more pressing, reasons, however, why standard costs are used in financial statements today:

1. In many plants, actual costs are too difficult (sometimes impossible) and costly to gather. The use of standard costs simplifies and, therefore, introduces economies in the cost-gathering and cost-bookkeeping processes.
2. Cost accountants have "sold" managements on the control value of standard costs and have also been successful, as suggested above, in convincing managements that standard costs are "real" costs

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[21] "Cost Included in Inventories," National Association of Cost Accountants, Research Series No. 10, Section 3, *N. A. C. A. Bulletin*, August 15, 1947, pp. 1598 and 1601.

[22] *Ibid.*, p. 1599. The first reason assumes, as has been implied, that the cost of goods manufactured is to be stated at efficient cost, not actual cost. This assumption has already been discussed.

[23] Note 4, *supra*. Mention was also made earlier of lower bookkeeping costs to be derived from using standard costs. *Ibid.*

and thus should be booked.[24] When auditors are confronted, at the end of the fiscal period, with standard costs and variances instead of actual costs, they have but two choices: to accept them or to try to prorate the variances between inventories and cost of goods sold, which some have done. But there are often difficulties in finding satisfactory bases of apportionment.

The foregoing reasons appear to be the most cogent justifications for the prevailing standard cost accounting practices.

### *A General Conclusion*

It should be clear that standard costs are found in financial statements today as a result of practical necessities, and not theoretical blessing. The use of standard costs in financial statements is one of the many areas in which accounting practice diverges from the accounting theory. Although the use of standard costs in financial statements is apparently desirable from a practical standpoint, accounting writers should, nevertheless, be careful not to infer therefrom, or allow their readers to infer therefrom, that such practice is consistent with good financial accounting theory.

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[24] In this connection, some accountants have attacked the very foundation of actual costs. A British accountant contends that actual costs contain certain "inevitable inaccuracies" and are "mathematical abstractions." "The best that can be said about an 'actual cost,'" he writes, "is that it is an arithmetical exactitude, being the average of a number of unspecified variations." K. W. Bevan, "The Accounting Processes of Standard Costing," *The Accountant*, April 10, 1948, p. 282.

Arguing that, if six public accountants were to draw up financial statements for one business, each set of statements would differ from the rest in some respects (which is certainly true), another accountant recommends standard costs as the only exit from the actual cost dilemma. He states, "Many overlook the point that, in determining this so-called actual cost, arbitrary divisions of overhead have been made and arbitrary divisions of joint costs and by-product costs have been used. No method has ever been devised to measure the actual cost of the product of a modern industrial plant." In proposing standard costs as the only solution, he concludes that "Costs of production should reflect the average cost under normal conditions." Howard E. Cooper, "Some Controversial Phases of Standard Cost," *N. A. C. A. Bulletin*, September 15, 1933, pp. 84 and 87.

These writers have some good points, but more basic to the whole argument presented by these and other accountants is: Do bookkeeping entries *determine* profits or do they *reflect* profits? It is conceded that the *correct* actual costs are often not calculable. This fact should not lead accountants to abandon all concepts of actual cost, however. What is more, the arguments above over-emphasize the portion of actual costs which is found by "averaging" and "arbitrary apportionment." Direct labor and direct materials can be found unequivocally for jobs in the absence of joint cost problems. Overhead per job needs to be estimated, of course, but the degree of error is not so large as that suggested by Cooper and others.

# The Accountant's Contribution To Industrial Relations

by JAMES D. WILLSON

THE RECENT RECESSION and the continuing upward spiral in costs, coupled with a profit squeeze, are significant factors in making business management more vocal in employee relations. Management seems to be finding a new voice to talk about competition, the need for profits, the importance of quality, and the necessity for continuing drives on costs. There exists an increasing determination on the part of some members of management to insist that employees be told the economic facts of life. Further, the desirability of reviewing these subjects frequently, not merely at the bargaining table, is being appreciated more and more.

It is in both of these areas—continuous industrial relations and the bargaining table—that the accountant can and, indeed, must make his contribution. Working through proper channels, the accountant, who is trained to present the facts and skilled in the use of figures, can be of material assistance if he is so inclined. Whether the discussion centers on the broad social forces at work in the free enterprise system or the economic status of one company, it would seem that the same fundamental approach must be taken.

## Information and the Employee

From the management viewpoint, it is basic that the true interest of the employee in the business be recognized. Not only does the question arise as to *whether* information should be shared with the employee but also *what* information should be provided. At first blush, it might appear that the primary attention of the average employee is on higher wages, shorter hours, and improved working conditions. Yet, whether he realizes it or not—and perhaps it is management's fault if he does not—the employee has a much greater

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interest in the business than these direct but fundamental objectives. Frankly, after many years of service, the employee has much more "invested" than the typical stockholder or bondholder. These years can never be returned to him. It follows, some of us believe, that the highest degree of success in getting management and employees working together involves these elements:

1. Recognition by management of its obligation to those who have spent many years of their life as salary or wage earners in the business, including the obligation to manage wisely.
2. Encouragement of the salary or wage earner to recognize a competent management as the best form of social security.

Generally speaking, more and more managements have come to realize that the employee is entitled to information about the company. They know, and want the employees to understand, that jobs and wages depend on earnings just as do stockholders' dividends. High wages do not for long stem from enterprises which are losing money.

### *Facts and Figures for Continuous Industrial Relations*

The first task of management, to which the accountant can make a contribution, is in the broad industrial relations area and has these three aspects:

1. To convey to the employees an appreciation of the inter-relationship of stockholder, customer, employee and management.
2. To bring about an understanding of the company's progress during the year with reference to income and expenses and financial conditions.
3. To outline the economic problems which stockholders, employees and management must face together, and the outlook for the coming year or years.

It goes without saying that the job of an industrial worker is a very important influence in his life. Most of the things he hears about his company he relates to his own job. There are a great many subjects about which he should be told, whether in an annual report for employees, in the company house organ, by special letter, by bulletin boards, or otherwise. As accountants, our chief interest is in financial facts and figures. While a company's chief asset is its personnel, yet the fact remains that not one automobile, not one barrel of oil, or not one piece of equipment could be produced without capital. This economic fact of life and similar subjects must be conveyed to the employees in a convincing and understanding manner if free enterprise is to thrive. A suggested check list of financial subjects to be covered in employee reports is:

A. Investment
   1. Explanation of statement of financial condition
   2. Nature of properties.
   3. Source of capital
   4. Need for stockholders
   5. Investment per employee

B. Operations
   1. Total income and disposion, including apportionment for salary and wages and other employee benefits
   2. Comparative profit information—in simple form
      a. With other years
      b. Profit per employee
      c. Profit per dollar invested
      d. Profit per dollar of sales
      e. Profit per unit of product sold (common unit)
   3. Salaries and wages
      a. Total
      b. Average weekly or yearly
      c. Comparative with other industries, etc.
   4. Taxes
      a. Per employee
      b. Per share of stock
      c. In relationship to wages
      d. In relationship to dividends
      e. In relationship to profits
   5. Dividends
      a. Total amount
      b. Per employee
      c. Per stockholder
      d. In relationship to wages
      e. In relationship to investment or market price of stock
   6. Depreciation and amortization
      a. Total
      b. Per employee
      c. Nature and value to employee
   7. General
      a. Industry trends in sales and earning
      b. Industry position of company
      c. Nature of, and benefits in, pension and welfare plans
      d. Cost reduction achievements by employees
      e. Future outlook, etc.

With some idea of what can be said, the next question is how the story best can be presented. From the financial viewpoint, there are two principal devices which may help:

1. A simplified income statement.
2. A "per employee" statement.

SIMPLIFIED INCOME AND EXPENSE STATEMENT FOR EMPLOYEES
THE PUBLISHING COMPANY-HOW TOTAL COMPANY INCOME WAS DIVIDED IN 1957

| | | | |
|---|---|---|---|
| 1. | We received from the sale of products and services a total of | | $143,690,722 |
| 2. | Out of this amount, we had to pay, not including salaries or wages, | | |
| | Taxes | $16,203,190 | |
| | Materials and supplies | 60,100,960 | |
| | Depreciation | 1,747,319 | |
| | Other expenses | 2,090,376 | 80,141,845 |
| 3. | After payment of these bills, there was remaining to be divided between employees and stockholders | | $ 63,548,877 |
| 4. | And here is how the division was made: | | |
| | Paid out in pay rolls (89.6%) | $56,977,693 | |
| | Paid out in dividends ( 5.4%) | 3,413,667 | |
| | Retained for future use (5.0%) | 3,157,517 | 63,548,877 |
| | Balance | | -0- |

**EXHIBIT 1**

An example of a simplified income statement is shown in Exhibit 1. There may be any number of variants, but the idea is to avoid technical accounting terms. The main objective is to try and translate various operating factors into terminology the employee can understand readily. By exercising a degree of imagination, the accountant, in most instances, should be able to tell a financial story to the employee in understandable, everyday language. Exhibit 2 depicts an example of a "per employee" statement. One might well ask about the advantages of translating total income and cost figures to "per employee" dollars. Generally speaking, of course, a person tends to relate such data to his own compensation. An interpretation of Exhibit 2 to the employees could include these points:

1. To pay the wages to each employee, the company found it necessary to plan and secure sales of $16,844 for each person (excluding officers) on the payroll.
2. To help in meeting all costs, another $342 per employee was secured as dividends from subsidiaries.
3. To provide the materials to work on, to cover a share of the cost of the building in which to work and the equipment with which to do the job, as well as the taxes payable, the company spent or set aside another $10,864.

4. After all such costs, the average sum of $6,322 per employee was left to pay salaries and wages, to pay dividends to stockholders, and to reinvest in the business.

5. The company paid $5,209, on the average, to each employee. This represents 82.4% of the total funds available for payment to employees or stockholders or retained for growth.

6. All the officers of the company received an amount of $122,600, or the equivalent of $152 per employee. This was their compensation for wisely guiding the company and securing the earnings which the company did experience.

ILLUSTRATIVE "PER EMPLOYEE" STATEMENT
THE REPPERT CORPORATION STATEMENT OF INCOME AND EXPENSE
For the Year Ended July 31,1958

| | Total | Per Employee |
|---|---|---|
| The company received: | | |
| From customers for goods purchased | $13,560,100 | $16,844 |
| As dividends from subsidiaries | 275,000 | 342 |
| Total Received | $13,835,100 | $17,186 |
| The company's expenses were: | | |
| For materials and supplies | $ 8,190,700 | $10,175 |
| For wear and tear on buildings and equipment | 292,300 | 363 |
| For federal and state taxes | 262,300 | 326 |
| Making a total of | $ 8,745,300 | $10,864 |
| Which left for salaries, wages, dividends and reinvestment in the business | $ 5,089,800 | $ 6,322 |
| This was divided as follows: | | |
| Paid to employees (excluding officers) as salaries and wages | $ 3,796,140 | $ 4,716 |
| Paid for employee benefits, including group life insurance, pension fund contribution, etc. | 396,800 | 493 |
| Total | $ 4,192,940 | $ 5,209 |
| Paid to officers | 122,600 | 152 |
| Paid to stockholders as dividends for use of capital | 437,800 | 543 |
| Reinvested in the business to cover the growing needs | 336,460 | 418 |
| Total Division | $ 5,089,800 | $ 6,322 |

**EXHIBIT 2**

7. For the use of their capital to provide materials and facilities, etc., the owners of the company were paid the equivalent of $543 per employee.
8. Finally, another $418 per employee was set aside for future growth to help ensure the continuance of the jobs of everyone in the company.

### *Facts and Figures for Collective Bargaining*

The second principal area of industrial relations in which accountants have an interesting task to perform has to do more directly with labor negotiations. Labor relations are entering a period, or perhaps have entered a period, where financial data is assuming a more important role. There is a trend in labor negotiations towards getting the facts. Moreover, there is a decided tendency to consider these two basic questions:

1. What are the total fruits to be distributed—the income?
2. To what share is each participant entitled—management, capital, and labor?

The share which labor will get probably is determined largely by collective bargaining. The accountant does not negotiate; that is the function of the personnel manager or labor attorney. However, the accountant should be at the right hand of the company negotiators, providing financial facts and figures, analyzing the cost of union demands, calculating the effect of the demands or alternatives on the company operations. Some general functions which he might perform are these:

1. Develop and supervise the maintenance of company records so as to provide essential data for labor negotiations.
2. Analyze union contracts and suggest desirable changes from the operating or cost viewpoint, based on knowledge of the cost of certain clauses, etc.
3. Anticipate financial cost data probably needed in negotiations, in consultation with the personnel department, and take steps to get it.
4. Supervise the gathering of pertinent outside financial data.
5. Determine the probable cost consequences of union proposals.
6. As requested by the company negotiator, present figure-facts and interpret them.

One highly successful method of preparing for labor negotiations is through the compilation of a "fact book" for the company negotiators. While much of

the information will be secured by the industrial relations activity, a significant amount can be secured by accounting personnel. Suggested financial-cost data would include:

A. Financial condition and operating results

1. Recent financial statements of the company.
2. Breakdown of annual earnings to show share allocated to employees, supplies, etc.
3. Comparable data, like that developed by "2" above, on distribution of income for competitors, or industry, etc.
4. Calculations for company, competitors and industry
   a. Return on investment—several years.
   b. Net income as % of net sales—current and prior years.
5. Trend data for several years as to salaries and wages as a % of net sales.
6. Break-even point.
7. Estimated net income or loss at varying production levels.
8. Forecast of operating results for current and/or next year.
9. Estimated operating results if union demands are met.
10. Additional sales volume required to earn cost of union demands.

B. Wage data

1. Total cost of wage and fringe benefits, analyzed by element, viz. regular pay, overtime premium, cost-of-living adjustment, vacation pay, call-in pay, shift differential, group insurance, pensions, clothing, meals, coffee break, etc.
   a. Comparative by years.
   b. Comparative with industry or competitors.
2. Same data as for "1" above, calculated on an hours worked basis.
3. Average pay data
   a. Straight-time hourly earnings.
   b. Gross and take home weekly pay.
   c. Trends in above averages.
4. Range of weekly gross pay, take home pay, etc.
5. Per cent increase in pay—weekly or hourly—from selected basis or period.
6. Wages paid by work classification.
7. Wages paid by age or seniority groups.

C. Hour data
   1. Total man-hours worked.
   2. Average weekly, monthly or yearly hours.
   3. Range in hours worked.
   4. Analysis of hours worked by pay rates—regular, time and one-half, double time, etc.
   5. Hours worked by job classifications.
   6. Lost hours, in total and by cause.

D. Other
   1. Union demands
      a. Total annual cost.
      b. Cost per man-hour.
      c. Cost effect on product.
      d. Estimated cost of extending similar benefits to non-union groups.
   2. Productivity
      a. Per machine-hour.
      b. Per man-hour.
   3. General data re turnover, etc.

This type of information can be most helpful. Incidentally, much of it can be secured rather easily through proper planning. Thus, as soon as convenient and long before labor negotiations start, the accounting executive should discuss with the personnel department or those handling labor negotiations exactly what type of information is needed.

### *Getting the Facts Understood Through the Figures*

The reporting of the facts is one thing. Getting them understood may be quite another thing. This is true with respect to both management representatives and union representatives. Consequently, extreme care necessarily should be used in interpreting the data. The accountant must not only furnish understandable accounting figures but also assume a certain responsibility in seeing that they are understood and the limitations realized. Again, a little common sense can be useful. Consideration should be given to rearranging information to get at the vital facts which best explain the company attitude. An example of some realignment of per employee data is shown in Exhibit 3. The illustration, for use in negotiations, eliminates perhaps superfluous figures and attempts to define the maximum range of the problem. The principle, in any event, is to be flexible and simple in the presentation.

THE JOHNSON COMPANY - DISTRIBUTION OF EARNINGS
For the Year Ended July 31,1958
ILLUSTRATIVE STATEMENT OF OPERATING
RESULTS FOR USE IN LABOR NEGOTIATIONS

| | | |
|---|---|---|
| John Doe, our average worker, produced goods, which we sold to our customer, and which were valued at | | $29,000 |
| The materials from which these goods were made, cost the company | $14,500 | |
| John received as regular wages, overtime pay, overtime, and supplemental benefits, the sum of | 5,300 | 19,800 |
| This left available this amount | | $ 9,200 |
| The company set aside for the use of machinery and equipment, paid taxes, stockholders dividends, and other expenses; and retained for future needs an amount of | | 8,910 |
| The undistributed profit John made for the company was | | $290 |

During last year John Doe worked 2,450 hours, so that the undistributed profit is equivalent to $.118 per hour. With this amount John helps build a backlog which he, his fellow workers, and the company, may need in less prosperous times.

If the same general conditions may be assumed to exist next year, this $.118 represents the amount about which the company can bargain. How much do you, the union representatives, think should be set aside for future contingencies, and how much should John get?

**EXHIBIT 3**

Charts or graphs may be found helpful in presenting financial facts relating to labor matters. For example, management usually is interested in the cost of demands at various production or sales levels. A simple break-even chart could be used to reveal the full impact of such increased costs on the cost-volume-profit structure of the company. Exhibit 4 illustrates a possible application. In this example, the union demands and related salary, wage and fringe benefit adjustments are grouped to reflect all affected costs, although each factor could be separated. Briefly, a reading of the graph will reveal these facts:

1. At any given sales (or production) level, the effect on total costs of the requested wage increase. Thus, at 75% of plant capacity, the increased pay roll and costs would be:

| | | |
|---|---|---|
| Fixed costs | $2,000,000 | $4,400,000 |
| Variable costs | 2,400,000 | |

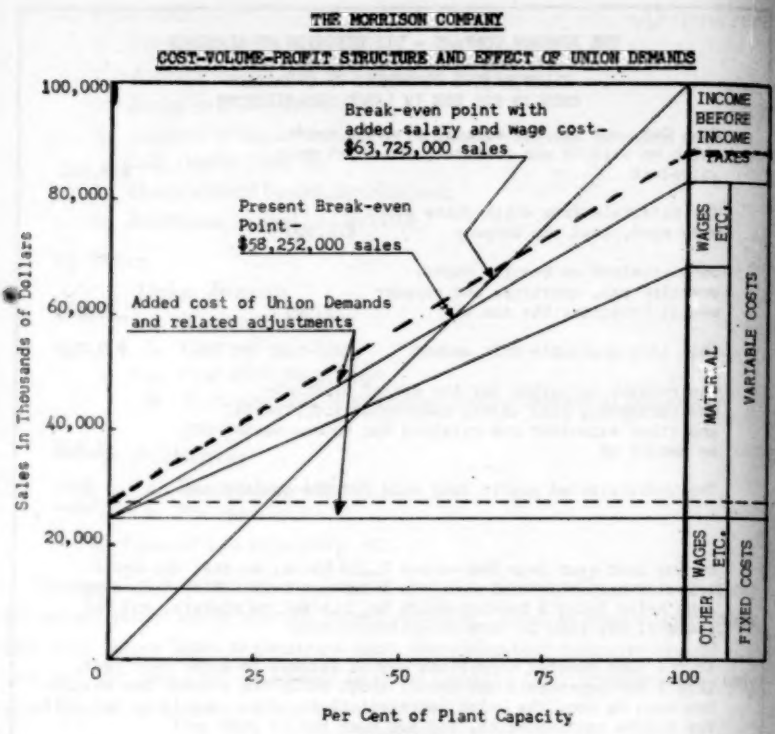


**EXHIBIT 4**

Similar determinations can be made for other activity levels.

2. The increase in the break-even sales volume from $58,252,000 to $63,725,000.

It will bear mentioning, also, that the break-even chart technique and the related segregation of costs into fixed or variable categories can assist in answering other pertinent facts relating to the proposed wage adjustment, such as:

1. The additional sales volume at any given level required to produce the same profit before taxes.
2. The additional product unit costs or man-hour costs at selected activity levels.
3. The total effect on earnings at any given activity level.

Yes, there is a lot of opportunity for getting the message across to employees. And the accountant must do his part.

# Facing Up to Centralized Accounting

by JACK J. COOPER*

A PERPLEXING PROBLEM to latter-day industrial accountants is the diverse pattern of the trends in decentralization of multi-plant operations. Depending upon the industry involved, the size of the corporation and the day-to-day inclination of managements, a forceful argument may be presented for complete decentralization, complete consolidation of managements, or any combination of opposite paths to the goal of either extreme.

Since any one of the alternatives is decided upon more from an operating point of view than for financial division convenience, it is usually the lot of the industrial accountant to comply as gracefully as possible. However, there is one way to "beat the game", so to speak. That is to seize the initiative by declaring without reservation that, regardless of the current trends in plant operation, distribution, sales, product research or other facets of the enterprise, the centralization of accounting functions is desirable and the most efficient of the alternatives. Moreover, this is true without regard to the status of the other functions. Axiomatically, then, it could be offered that operating, sales, or other management decision-making may be clearly decentralized while, at the same time, accounting functions, financial analysis and other financial service functions are consolidated for the highest potential in economic administration.

This opinion is based on the writer's limited personal experience in this area. Accounting literature, particularly that dealing with integrated data processing installations, emphasizes the possibilities of employing the capacity of modern processing units to successfully absorb a practically unlimited volume of work, once the programming of data processing is established. Robert A. Morgan, writing in the September 1957 issue (Section 3) of the *Bulletin*, for instance, said, "our regular accounting activities could be completed in a more timely manner if all accounting work were centralized" and indicated that his company's reasons for retaining many decentralized accounting functions were based on the fact that they had not yet adopted the use of advanced equipment which makes centralized operations practical.

As a matter of cold fact, the cost and effort involved in installing the type of system now considered essential for modern data processing, such as the high speed electronic calculator, random access storage units and, most particularly, even the smallest capacity computer, point up the necessity for their full utilization through central-

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ized processing of data for all segments of a multi-plant operation. In other words, electronic aids to data processing by their very nature lend themselves to increased efficiency and saving with increased volume of work. The beauty of this concept is that centralization of function need not, and perhaps should not, necessitate loss of management prerogative wherever such authority is needed at a division or plant level.

Assuming this to be true, a divisional or plant controller normally maintaining a self-sufficient accounting staff would be extremely short-sighted in opposing the centralization of all his accounting functions, as such, if this stand is taken for the sake of maintaining divisional integrity. We all know that key accounting personnel are not replaced by automation. The effect, rather, is only to produce better, speedier and more dependable information with reduced routine clerical work, and to broaden the accountant's role toward the management rather than the record-keeper's level. The modern accountant may still be an effective member of a management team whether or not he has a large staff of clerks under him. As Raymond B. Jordan expressed it in his letter in the April 1958 *Bulletin* ("Changed Qualifications for the Industrial Accountant"), only the "doers" will be eliminated. Where such centralization is accomplished, the need for accounting personnel should be determined by the requirements for cost and financial analysis at the plant or divisional level, which will involve only the highest skilled key accountants.

And again, Walter M. Harris' fine article in the July 1956 *Bulletin*, "Centralized Data Processing for Decentralized Management," confirms this hypothesis, i.e., "In using the reports issued by the electronic data processing center, there presumably will always be personnel performing analytical work for each division using whatever diverse analytical methods they individually think best. In short, the data processing can be, to a considerable degree, standardized for the different units. Data analysis need not be."

At the same time, the accountant should take the opportunity to point out to management that any decision as to the operating efficiency of centralized versus decentralized operation of any part of the business may be best determined by first centralizing and standardizing the accounting methods of a multi-plant operation so that the management is sure that it is not comparing apples and avocados.

In brief, rather than being hauled "kicking and screaming" into the new age of industrial accounting, by the engineers, the systems men and the mechanical monsters, let's take a hard objective look at ourselves and follow the path of progressive management without regard to our individual rigid organizational concepts.

# How We Train Our Accountants To Think Like Managers

by L. W. BRUMMER

As BUSINESS ENTERPRISES GROW MORE COMPLICATED in the modern world and as specialists in business skills become more numerous and more necessary, management of business for profit becomes more difficult. Fewer and fewer large enterprises enjoy the stimulation of the single guiding genius who built the business with his own hands and heart; more and more enterprises turn to administration and organization as necessary substitutes for inspiration. Hired managers have become the bulwark of business success, and these managers rely increasingly on capable helpers who can think and act in management terms.

Accountants are perhaps the oldest group of specialists on whom managers have relied for assistance. Historically, accountants have recorded, reported, and audited the work done by individual entrepreneurs. As outsiders, they have been necessary evils—cajoled and cultivated in times of trouble, ignored in prosperity, tolerated but unloved. Henry Ford, the elder, is reputed to have turned a deaf ear to pleadings for more office space for his accountants. "Keep 'em crowded," he said, "Maybe they'll get discouraged and leave."

In modern business, accountants of the historical type are becoming obsolete. Professional managers need accounting help in the family. They must understand accounting philosophies themselves. And they must have assistants who are skilled in accounting techniques and who also are capable of management thought and action. Can such men be developed? Can managers be persuaded to accounting thought? Can accountants be trained to think like managers? Our answer is, "Yes."

The key to success in this endeavor is found in one word—atmosphere. The right sort of man, skilled in accounting, can be trained to think like a manager if he is placed in a management atmosphere—physically, mentally, and emotionally. If he lives and works in an atmosphere of vital business needs, he must absorb the manager's desire for business health and growth. He will participate in the manager's thinking and planning, rise with him in his dreams of achievement and share with him in his struggles for survival.

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### *Our Accounting Function — Managerial From the Start*

Our corporation planned from the start to develop management thinking among our accountants. Being a relatively new corporation, such a start was possible. We constructed our manufacturing plants in 1952 and 1953, and, during that period, training in manufacturing processes was undertaken by the men who were later assigned to supervisory positions in the production and engineering departments. Simultaneously, we planned our cost accounting activities. Our first cost accountants worked with the production supervisors during the construction period, assisting them with the necessary administrative details, learning the manufacturing processes, and planning with them the methods of recording operating costs. The cost accountants were able to gain a basic appreciation for manufacturing problems, and the supervisors had an opportunity to become familiar with accounting viewpoints.

By the time production started, we had agreed on a decentralized cost accounting function. We arranged for each cost accountant to maintain his office in the production area and to serve on the staff of the area manufacturing superintendent. Such an arrangement is not common in American industry, although certainly not unique, and its inauguration required some selling. The production executives in their previous employment had not been used to the idea of close contact with the accounting department and were a bit wary. However, the favorable impression made by the first cost accountants, with whom they were now well acquainted, argued in favor of the idea. Our financial executive supported the proposal as a means of increasing the effectiveness of accounting activities. The accountants themselves had grown enthusiastic about the manufacturing processes and much preferred the scene of activity to the aloofness of the administrative offices.

Out of this grew the cost accounting organization we now have. Each cost accountant—there are eight of them in one plant and four in the other—maintains his office in the manufacturing area. He acts as staff assistant to the superintendent of that area. If the area were an independent company, the superintendent would be president and the cost accountant would be controller. The cost man is responsible for specified accounting functions and, in addition, is available for whatever accounting service the superintendent needs, whether it be special analyses or liaison with the payroll department. The cost accountant reports to a cost supervisor who reports to the plant accountant. He may work alone or he may supervise a number of clerks and assistant accountants, depending on the work-load in his area. He may devote his time to strictly accounting functions or he may take over the supervision of area clerical and office management duties to suit the convenience of his manufacturing superintendent.

With this start, we developed the organizational relationship which has now been extended to all accounting units throughout the corporation. The plant accountant is one of a group of five chief accountants of plants and divisions who also work for two bosses. Each acts as controller on the staff of his operating executive. They are on the operating payroll, too, and are subject to compliance with the executive's administrative rules and regulations. But the accounting work they do is directed by the corporate controller's office, and they look to the controller for their own future advancement in the corporation. The controller's office closely supervises the activities in each of the five accounting sections, including procedure, efficiency, and salary changes. The operating executive approves all administrative changes and uses the accounting unit directly as his own group without reference to the controller.

This, of course, is a unique relationship. It is neither a line relationship nor a staff relationship; it is an anathema to the policy-writers and the chart-makers. Actually it is a relationship based on the anti-biblical principle that a man can indeed work for two masters—if he is the right kind of man. Specifically, an accountant can work for both a financial executive and a line executive if all three have learned to think like managers. After all, we are all serving but one master, the corporation as a whole.

It is obvious that there is no place for arbitrary attitudes in this type of an organization. Only men who are skilled at selling their wares can be used. Benjamin Franklin is reputed to have said, "All mankind can be divided into three classes: those who are immovable, those that are movable, and those that move." In our organization we are interested in only the last named.

### *Staff Selection on Managerial Qualities*

When we look for an accountant, we look for a man with the "three eyes" of

1. Initiative
2. Imagination
3. Intelligence

We believe that these characteristics are native and cannot be successfully developed. This statement may be contested, but the point is that we have so much specific training work to do that we cannot waste time on candidates who may never come up to par in these three basic characteristics. We look for these characteristics in a candidate for employment. Granted, they are sometimes hard to uncover. We test intelligence with a simple 12-minute written examination and use the results only as a broad screening device, principally to call attention to unusually high scores by candidates we might otherwise have overlooked. We look for initiative and imagination in attempts by the candidate to

sell themselves to us and by the background knowledge of our company which the candidate managed to acquire. We look for evidence in his past experience of accomplishment and of diplomacy, two valuable and rare characteristics!

You will notice that in the "three eyes" no mention is made of education nor of accounting experience. Actually, in hiring a trainee, we look at these points last. Formal education is desirable. But many college graduates lack one or more of the "three eyes" or lack the ability to sell themselves. Our accountants range broadly in formal education. Some have no degrees at all but have educated themselves. Some have majored in marketing, mathematics, management. economics, or even English literature. And some have majored in accounting and business administration. Their rank in our eyes bears no relation to the subject in which they specialized. It does relate, however, to their achievement in that subject and their capability in absorbing other subjects. Certainly our accountants need formal accounting training. We feel that a man with "three eyes" will correct his deficiencies when faced with the need. This has been true. Our men have attended evening schools or taken correspondence courses when necessary, or have learned accounting through self-study on their own time.

So much for our selection policies. Now what do we do with these men once we have them? I would like to use our cost accountants as an example. We feel that a working knowledge of the manufacturing process is of first importance to an area cost accountant. It is essential to an adequate cost job that the accountant have at least enough process knowledge to draw flow charts and name all the essential pieces of equipment. In addition, he must be able to locate each important equipment piece in the plant, know the raw material content of each, and the state of product completion. This basic information must be kept current by daily trips through the operating areas and daily contacts with the foremen and supervisors about their problems and his own. He can then be sure the cost figures he prepares are a proper reflection of the actual conditions in the manufacturing areas and that he will be able to present and discuss the reports of results intelligently.

### *The Cost Accountant and His Job*

We expect a lot from our accountants at Chemstrand, and we give them the freedom to live up to our expectations. This is best illustrated by the following job requirement summary which our cost accountants compiled. It's a mighty idealistic formula. We don't have any cost accountants who measure up completely, but all of our cost accountants are trying for this goal. And, as a result, a lot of them are measuring up very well indeed.

## WHAT SPECIFIC DUTIES DOES A COST ACCOUNTANT PERFORM?

1. *Reports:* He gathers production cost data, and calculates, summarizes, audits, records, and reports it. Formal reports may be daily, weekly, or monthly. Informal reports may be made in written or verbal form at anytime. Having presented a report, he then explains, interprets, and evaluates it, and suggests action.

2. *Standards:* He prepares standard manufacturing costs by assembling necessary data, discussing them with line and staff supervisors, and presenting them in prescribed form. He participates in the evaluation of proposed standards prior to their adoption.

3. *Budgets:* He assists responsible supervisors in preparation of their budgets by furnishing the required format, providing historical data, calculating and summarizing as required, and maintaining controls throughout the budget period.

4. *Inventories:* He prescribes the method for taking physical inventories of raw materials, supplies, and in-process and finished goods. He audits the work of operating personnel in taking such inventories. He applies costs to quantity records, and resolves discrepancies.

5. *Bookkeeping:* He prepares journal entries for the purpose of closing the plant books monthly and assists in resolving the trial balance for preparation of financial statements. He may maintain subsidiary ledgers as assigned.

6. *Special Analysis:* He assembles operating cost data as may be required for special reports requested by any members of plant management.

7. *Economic Studies:* He assembles operating cost data and prepares comprehensive studies indicating the economics of new or altered products, processes, and facilities. He may prepare these reports as he deems necessary or at the request of any member of management. He also reviews capital appropriation requests to establish return on investment in a manner consistent with corporate policy. In all cases, timeliness is of utmost importance.

8. *Systems:* He designs and installs clerical methods and procedures for the work of his section, calling upon the technical assistance available from other accounting groups.

9. *Conferences:* He attends formal and informal meetings of operating and staff managers to maintain his own knowledge of current conditions and to furnish financial information as required.

10. *Liaison:* He resolved questions and problems between his operating area and other sections of the accounting department, such as payroll, accounts payable, property, and other cost sections.

11. *Training:* He trains his employees in their work, and other employees in activities which affect the work of his section. He conducts training classes for all accountants in accounting practice and process knowledge.

12. *Administration:* He supervises the work of any employees assigned directly to him, recommends employment, discharge, and salary changes, and maintains high standards of conduct, housekeeping, and morale.

## WHAT TECHNICAL AND PROFESSIONAL SKILLS DOES A COST ACCOUNTANT NEED FOR PROPER PERFORMANCE OF HIS DUTIES?

1. *Education:* He must have wide general background knowledge gained from adequate formal education, in order that he can quickly grasp the importance of any circumstance or set of facts, and so that he will know where to look for the information he needs. He must be thoroughly familiar with cost accounting theory and practice, and have at least an intermediate knowledge of general accounting theory and practice. Such education is sometimes gained by individual study, correspondence courses, and technical conferences. Most often, however, it requires a formal college degree supplemented with special outside study equivalent to a year of graduate work.

2. *Communications:* He must be skilled in the presentation of facts so that he will be completely understood. This requires him to be a persuasive conference participant and an effective public speaker. He must be able to write clear, concise, and readable reports. He must be able to design charts and tables of figures in such a way that they convey information effectively. In short, he must be skilled merchandiser of his results and viewpoints.

3. *Information:* He must acquire and maintain a broad fund of plant and corporate information. He must be generally familiar with the manufacturing processes and service functions of the entire plant, sufficiently so to explain them to others. He must be specifically informed on the manufacturing processes of his own area, so that he can speak the technical language used. He must be able to quote from memory the important operating data, such as speeds, capacities, reactions, unit costs, consumptions, yields, and financial results. He must know the names of all supervisory personnel in his area, and they must know his. He must know the name of each corporate officer and department head, and be able to describe his functions. He must be thoroughly familiar with the functions of each of the plant and corporate accounting sections to the extent of being able to explain them to non-accounting employees. He must understand the basic plant bookkeeping procedure, including the name and function of each standard journal entry and its effect on the financial statements.

4. *Analysis:* He must have an analytical mind, easily perceiving the important elements of a problem, and drawing related items together to form conclusions. He must be skilled in analysis of clerical work as well as in analysis of financial data.

5. *Methods:* He must be able to design and install systems and procedures for accounting operations. He must know how to use work simplification techniques to improve clerical efficiency. He must know the operation of the important mechanical data processing devices, and how to get further detailed information when he needs it.

6. *Work habits:* He must be able to concentrate on a given task, regardless of office hours or personal comforts, increasing the tempo of output as necessary to meet assigned deadlines. He must know how to tackle the job in such a way as

to bring it to a conclusion in the quickest and most efficient manner, without making unnecessary work for himself or for others.

7. *Supervision:* He must be able to supervise the work of others, obtaining prompt and efficient results with high morale.

8. *Experience:* Adequate skills for proper performance of duties cannot usually be expected with less than five years of working experience after completing a thorough formal education.

### WHAT PERSONAL ATTRIBUTES DOES A COST ACCOUNTANT NEED TO PROPERLY PERFORM HIS DUTIES?

1. *Intelligence:* He must grasp the point quickly.

2. *Initiative:* He must be a self-starter, seeing what needs to be done, and finding ways of doing it.

3. *Imagination:* He must create ideas in methods of cost control, methods of work accomplishment, and methods of presentation. He must be ingenious in attaining desired objectives.

4. *Integrity:* He must be thoroughly honest, both in financial matters and in conveying information. He must carefully guard the confidential information with which he works.

5. *Interest:* He must have enthusiasm for his work, for the work of his assigned area, and for the work of the corporation. He must be inherently curious.

6. *Determination:* He must stick to his point when right, and see every job through to a satisfactory conclusion.

7. *Tact:* He must be able to persuade others to willing action, without undue antagonism.

8. *Judgement:* He must survey all the factors of a problem and evaluate their relative importance.

9. *Adaptability:* He must be able to change pace from one assignment to another.

10. *Loyalty:* His primary consideration must be the prosperity of the corporation.

11. *Commercial sense:* He must have a nose for profit as well as a nose for the grindstone.

### WHAT MOTIVE DOES THE COST ACCOUNTANT HAVE FOR HIS ACTIONS?

Since all corporate activities are translatable to the common denominator of the dollar, the cost accountant must work with information from many different sections of the company. He uses this information properly only when his motive is the improvement of the corporation as a whole. With proper motive, he creates confidence in himself and in his work. He functions as the corporate conscience.

### *Training Through Regular Work*

In order to meet such goals as these, some formal assistance is necessary. Our basic philosophy is on-the-job training, closely followed by helpful supervision. We want to make developmental opportunities available but to encourage individual initiative in making use of these opportunities.

Regular work is the best training device ever invented. Accountants have a unique opportunity to train themselves in management thinking with their regular work; in fact, they have an advantage in this endeavor which no other staff group enjoys. They have the assigned duty of drawing the picture of the business as a whole. They have the opportunity to collect and present the information on which the manager must base his decisions. And if they go about their work with the manager's viewpoint foremost, they can learn a great deal about the job of management.

Many regular accounting jobs require management thinking in the very act of preparation. Take a budget for example. How can you prepare next year's budget without a concrete mental picture of what is going to happen next year? How can an accountant come into closer contact with a manager's thinking than by prodding him into preparation of his budget? How can a "three-eyed" accountant prepare a budget without thinking like a manager? A wide number of the regular accounting jobs are, in themselves, training in management thinking—standard costs, projections of results, special studies, analyses, inventories—everything which affects the business can be more useful if it is imbued with management thinking.

### *—And Special Assignments*

However, no matter how we dress it up, pressing routine is a great killer of initiative. An accountant must constantly fight against being submerged by the pressure of urgent chores. His boss can help keep him on the straight and narrow road of management thinking by seeeing to it that he has tasks to do occasionally which are outside of his normal routine. Special assignments, as training devices, can be of several major types: new or unusual accounting jobs, routine chores which are new to the accountant assigned, or non-accounting assignments in which the accountant acts as deputy for one of his superiors or comes into contact with a wider circle of employees.

Many examples are available of new or unusual special assignments. An inquiry from the sales department about the estimated cost and return on investment of a proposed new product provides a top cost accountant with a

week-end's recreation and simultaneous exercise in management thinking. A plant requirement that all justifications for property additions must be prepared or checked by the cost accounting section provides a frequent diversion from routine operations. The controller's request for a report on next year's state unemployment insurance payment requires research, new personal contacts, and management thinking.

This is an era of consultants. If there is any advantage in that profession, it is the avoidance of continued routine by jumping from one job to another. Our accountants are often in a position to do valuable consulting jobs within their own organizations. One of our cafeteria managers, for instance, asked for some help in straightening out his operations. We assigned a cost accountant for a two-week period. We didn't take the accountant who normally prepares our cafeteria report; we took a man from the other end of the plant who was a complete stranger to the cafeteria and its operations. This gave the cafeteria manager what he needed—a focal point, a perspective, an excuse for paying specific attention to the causes of poor operations, and an independent brain and arm. Between them, the manager and the accountant improved operations in that two-week period to everyone's satisfaction. And the accountant now knows a lot about managing a cafeteria.

Once the vice president for manufacturing asked for an analysis of extra operating costs experienced during a major construction period. This job called for continued alertness to all effects of construction on operations. The factors might change each month. We gave the assignment to the utilities cost accountant for the simple reason that he normally was limited in his contacts. On this job he had to touch base with all cost sections to prepare a monthly report based wholly on management thinking.

In the most prosaic area of routine chores, much opportunity for valuable training lies hidden. Once we had an emergency shortage of punched card machine operators. Several were out at one time and the work had to go on. We could have hired a temporary experienced operator or worked everyone overtime or used a former operator who was now an accounting superintendent. Instead we picked one routine job of high volume involving a little key punching and a good deal of repetitive tabulation, and put one of our inexperienced accountants on it. He had never pushed a start button before. It took him two days to learn the job. At the end of two weeks he had gotten us out of a bad spot with our work-load, had made several suggestions for improving the routine operation, and had learned a lot about machine work.

Physical inventory of finished goods is good training for men who work normally with process operations. Distributing pay checks helps widen the

personal contacts of accountants with managers. Checking property equipment piece tags increases the management perspective. Even extending stores withdrawal slips can reveal uses of material and supplies with which a manager would like to be acquainted.

Outside of tasks of a strictly accounting nature, there are still opportunities for special assignments which will help diversify an accountant's influence and develop his initiative. Every organization has its employee-centered activities. An accountant can be a committeeman for the United Fund drive, reporter for the plant newspaper, or office representative on the central safety committee. He can be treasurer of the credit union, or of the employee's recreational association. He can organize the children's Christmas party, guide visiting Rotarians on a plant tour, or speak to the teachers on business-education day. All such assignments serve to create an attitude of organization interest, which is the way managers think.

### *Classwork, Too — By Our "Student" Faculty*

Another major approach to development of management thinking is through education and training. Our accounting departments hold weekly classes attended by all accountants, scheduled for an hour and a quarter in length. The general areas of subject matter are accounting procedures, plant operations, corporation finance, and management information. The individual topics are highly diversified; we cover everything from pay check preparation to operation of a production machine. As examples, here are the subjects from a recent schedule:

The chemistry of nylon
Accounts payable by punched-card methods
Instrumentation
Corporate financial statements
Functions of a systems and procedures section
Processes for texturizing yarn
The corporate insurance program
Property accounting
Our customers
Our competitors
Economic evaluations
Return on investment
Flow charts of our chemical operations
Our power house and its products
Accounting for returnable containers
Operations research
Electronic computers
Stores accounting
Our board of directors
Method of estimating financial results
Analysis of annual reports
Pressure vessels

At first we tried the technique of assigning each accountant the responsibility of obtaining a speaker for the subject selected. We abandoned this as soon

as it became apparent that, by using visiting speakers, we were losing one of the principal advantages of the activity—the advantage of training the accountant to prepare and present the subject matter himself. Now each responsible accountant is his own speaker. If he doesn't know his subject, he learns it before he speaks. Subject assignments are prepared six months in advance and are obtained largely from suggestions made by the accountants themselves. As a result of one suggestion, we recently added a second responsible accountant to the leadership of each class. He is assigned to open the meeting with a five minute talk on "What's New?" and presents recent changes in plant activity, organization, and management decisions which are of proper concern to management thinkers.

We feel that these classes are important devices in management training. They enable all of our men, scattered throughout the plant, to feel a unanimity of purpose. Through diversified subject matter, they enable us to remind all our accountants of the breadth of scope we expect them to attain. They provide opportunities to practice public speaking, program presentation, and effective communications. Last and least, they convey information.

Our class work is supplemented by circulation of study material in the form of articles and excerpts from management publications. A copy is provided for each accountant for his individual study and for his own library of training material. These articles may form the subject matter of regular or special training classes. A list of typical titles, illustrating the breadth of subject matter, follows:

Your writing can get action
Never overestimate the power of a computer
The art of clear thinking
Cultivating your bright ideas
It's cost shearing season again
Listening to people
Giant molecules
Paper: The modern industry burden
Business grammar
You can get your ideas across
How to develop ideas
Teach yourself management skills
Get action from your decisions
The long hard fight to control overhead costs

### *Supplementary Training*

Classes are only one means for education and training, of course. College supplements are undertaken by a number of our men. Evening courses in accounting are available at junior colleges and university extensions. Correspondence courses are used to good advantage. Valuable training is offered by our own personnel department in such evening courses as report writing, effective speaking, reading improvement, and plant orientation. And on-the-job coach-

ing from experienced men, is perhaps the most effective education of all. We try to provide educational opportunities, but we leave the acceptance of such opportunities to the individual. We cannot make the horse drink, but we can hold forth the expectation of management attitude and management education as the goal we expect of our successful accountants.

Another major area for individual development is professional, civic, and community activities. An accountant who successfully fulfills responsibilities outside the plant is bound to develop a management attitude by virtue of the fact that he represents the plant in his outside contacts. Membership in a civic organization will strengthen his interest in his company's public relations. Work on a community project helps to strengthen his perspective in organization and accomplishment of any assigned task. Several of our accountants have found particular usefulness in serving individually as the financial representatives of an agency in its relations with the Community Chest or United Fund. We have been amazed at how far a little genuine interest and accounting ability will go in improving the financial reputations of fund agencies. A man who has been successful in such a relationship becomes "Mr. Corporation" to outsiders rather than "Mr. Accountant." This is bound to increase his management thinking.

### *Informed Accountants Working "On Location"*

In summary, we have only one aim with our present program—to increase and intensify it and to make it more effective. We are thoroughly convinced of the advantages of the basic organization. From the line manager's point of view, it gives him a useful channel of communication on the financial side of the business. It gives him a wide-awake, hard-hitting staff assistant—for free! It gives him a voice in reports which are made, and a first chance with necessary explanations.

As far as the controller is concerned, he is interested in reports that are well designed and uniform, and which are completed promptly so that consolidation schedules can be met. With accountants in the control organization, he is in a position to set standards for both timing and form of financial reports. Even more important is his interest in the usefulness of financial data for expressing intelligently the actual state of operations and inventories. With this type of organization, he can feel that his information comes from the basic operation.

The general auditor likes the organization, too, since it provides eyes and ears at outposts throughout the corporation, trained to be alert for possible irregularities in inventories, payrolls, or cash handling.

The accountants, themselves, like the arrangement because of the opportunity for personal development. Accountants can be moved from one area to another, thus enriching their individual experience, rejuvenating their enthusiasm, and making them more valuable to the corporation. They enjoy the stimulation of management contacts and the opportunity for varied promotional opportunities. They are not reluctant to work hard because they know a lot is expected of them. Most important, they feel they are of real value to the success of the business—and they are right! The accountant who thinks like a manager will be accepted by the managers, and will have an opportunity for real and substantial contribution to corporate success.

## *Promote From Within*

by PAUL SHERWOOD*

MANY COMPANIES pride themselves on their records of promotions from within their organizations. You may see institutional advertising listing the top level executives with comments such as: "started as mail boy 1909" or "stock clerk in 1923, now president." This type of growth policy is admirable and certainly desirable to maintain interest and enthusiasm among promising employees and executives "on their way." Good men must be kept moving up the ladder if they are to remain in the organization. How does the accounting department measure up in this respect? Do we keep our good men moving up?

Let's take an oblique look at an average accounting department in a moderate-sized industrial plant. On top of the organization chart is the controller, possibly a man who came up from the ranks, with long service. On his staff we may find key men such as: general ledger accountant, cost accountant, tabulating supervisor, billing supervisor, procedures man, payroll supervisor, accounts payable supervisor, property accountant or some combinations of these and others. These men are, more or less, specialists. The controller is a generalist. He must be. His interests span the entire organization. He is not only concerned with accounting records and routines. He is a contributing member of management with a stake in every activity of the business, sales, engineering, production, and other. Who will replace him? One of the specialists?

Perhaps we'll be lucky. Perhaps, among these specialists, we will find one with some general background in other areas of accounting. Then perhaps not. These men may have all been promoted from within their own

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particular departments or fields. One of them must make what has been called the "vital shift," the shift from a specialist to a generalist. Those who have made this change-over regard it as many times more challenging than the earlier shift from a clerk to a supervisor.

Suppose the specialist is not prepared for this new broad-scope view, can't look beyond the accounting department, finds himself concentrating on those areas familiar to him, losing himself in bookkeeping detail, oblivious of his over-all management responsibilities. Not only will he suffer but the entire accounting operation may fall into disrepute because of his inadequacy. As this happens, good men may desert him, compounding his problems.

It follows, then, that our specialists must be guided, trained and encouraged to become more general in their views and acquire a broader scope while they are coming up. At least one (but preferably several) should share the controller's participation and responsibility in his management function, working with him on management problems and attending management meetings with him. He (or they) should serve their management "apprenticeship," to borrow a phrase, under the direction and guidance of the incumbent controller. In this way, at least one of them may be ready to take over when a better opportunity presents itself to the controller or when he retires.

What of the other specialists? Some have rather narrow backgrounds. Many tabulating supervisors have spent their entire careers in the tabulating room. Many billing supervisors are not accountants at all. To what next job can such men be promoted? How is their interest to be maintained? Are they to be allowed to think they are at the end of the promotion line? I hope not, because every employee who has reached the apex of his promotional potential becomes a "roadblock" for promising young people below him. If he doesn't move, no one else can gain the experience of his job in moving up through it.

Why not rotate promising supervisors in parallel fields of interest? For instance, rotate the billing supervisor with the stockroom or shipping supervisor or perhaps with the order writing supervisor or traffic manager. Another possibility is to move the tabulating supervisor into the methods section to broaden his background. A procedures man could rotate with staff personnel in other operating departments. Good men must be kept moving or risk stagnation. How well does your accounting department meet this challenge? If our future controllers are to come from our present accounting supervisors, let us have a definite living program of advancement to prepare them better for the future so that they may become better leaders than their predecessors.

# *Inflation — Present and to be Accounted for*

by WILLIAM HUIZINGH

HISTORICALLY, accounting has developed into its present form in response to the needs of management. During the four and a half centuries which have passed since the evolution of double-entry bookkeeping, accountants have developed conventions derived from experience, upon which financial statements are based. The advent of the large, publicly-held corporation, featuring division of ownership and management functions, introduced into accounting practice the factor of reporting to absentee owners, but primary emphasis continues to be placed on the importance of accounting reports for management. There appears to be no basic conflict between the needs of management and those of other interested parties; the mutual need is for information which will aid in an evaluation of past experience and will serve as a guide to future action.

If we were to attempt to locate the art of accounting in our overall field of knowledge, we would probably conclude that it is most closely identified with economics and statistics, since its subject matter is economic in nature and its techniques—recording, classifying and summarizing—are largely statistical. Its purpose is to portray economic reality in quantitative terms, to provide visible evidence of economic transactions and events. To be reliable and useful, data contained in accounting reports must be developed within the framework of two broad standards:

1. The events recorded must be economically significant and dependably objective.
2. The statistical techniques employed must be sound, that is, methods used should not introduce into the data any bias or distortion which might impair the validity of end reports.

## *Reasons Given for Avoidance of the Problem*

Among the conventions which accountants have adopted is the assumption that fluctuations in the value of money may be ignored, that changes in the purchasing power of the dollar are not significant economic (and hence ac-

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counting) quanta. This is not to suggest that accountants and managements are unaware of the magnitude of the erosion in the value of money which has taken place within the last two decades. The recent inflation has been accompanied by a halving in the value of the dollar in a matter of a few years; accountants are not blind to this obvious fact. But adherence to the "monetary convention" has been defended by many leaders in the profession who apparently believe that statements prepared in accordance with such a postulate do disclose economic data in a significant manner.

Specific defenses of current practice have been based on a number of widely divergent and often unrelated arguments. Some proponents point to past experience, claiming that fluctuations in the value of money tend to neutralize themselves in the long run, that the effects of today's inflationary state will be offset by those of tomorrow's deflation. That this point of view is at odds with the facts is immediately apparent. Fluctuations of the price level have not been moderate; they have been so material that failure to take cognizance of them would surely lead to enterprise disaster. Further, over an extended period of time prices have demonstrated an upward trend, and there is every reason, in view of generally accepted governmental fiscal and monetary policy, to expect that this inflationary bias will continue indefinitely. The truth is that our monetary unit is not stable and is not likely to be stabilized in the foreseeable future.

Another argument frequently heard is that business managements clearly recognize the problem of rising prices and that, accordingly, their decisions are modified to reflect the impact of inflation. In reply, it can be pointed out that intelligent guesses based on general knowledge of economic conditions should not be substituted for rational decisions based on systematic analysis of available data. In addition, it should be noted that, even if management had no need for data adjusted for price level changes, many investors would not be in a position to gain the judgment necessary to evaluate the effects of inflation, and hence would benefit from the availability of additional information.

A surprising number of authorities, in criticizing the idea of price level adjustments, express vehemently the conviction that what is proposed constitutes a clear-cut deviation from the generally accepted accounting concept of incurred cost. Coupled with this denouncement is the claim that adjusted data are lacking in objectivity. By contrast, it is our contention, as will be developed in greater detail later in this study, that only through an adjustment of raw data can financial statements be prepared which contain information essential to decision-making. While admitting the need for reports developed in the conventional manner, we will argue that, as guides to action, such statements are incomplete and in some respects tend to mislead and delude. Supplementary

statements which incorporate the effects of price level changes are essential to full disclosure.

Perhaps the most significant criticism of price level adjustments that has yet emerged is the point that the law and the courts have not recognized the problem. This fact poses difficulties with regard to contracts, dividend policy, and capital maintenance and especially in the matter of income tax calculation. There can be little doubt that legal considerations will delay the widespread use of data adjusted for price level changes. If, however, accountants are to perform those functions for which they are, through education and experience, best qualified, then in the discharge of their duty they must perforce influence the direction of legislation and judicial interpretation. Accountants claim to be experts in the measurement of business income; it follows that the profession should advise legislatures and courts rather than become blind disciples of bureaucratic ignorance.

Other objections to price level adjustments that one occasionally hears—that confusion and uncertainty will result and that accountants are not prepared to apply the necessary statistical techniques—are hardly worthy of notice. Surely, if more significant and meaningful reports can be presented by using adjusted data, confusion and misunderstanding which now exists may be overcome. And if the profession finds that its members must master the art of statistics in order to perform an important public service, this, too, can quite readily be accomplished.

A final criticism of price level adjustments which we shall note is that of the validity of index number series which are available. We should observe immediately that any average may be imperfect as a representation of the population from which it is derived, but this fact does not vitiate the final product when the alternative is unadjusted data. Any correction is to be preferred to ignoring the problem. We shall return to the matter of index number selection later in this paper.

### *How Unadjusted Dollar Data Mislead*

Returning to the two standards set already forth for usefulness of accounting data, we shall now evaluate current accounting practice and the above criticism in the light of these criteria. First, we may ask, are the transactions with which the accountant concerns himself economically significant and dependably objective? To this question there can be but one answer—an unqualified "yes." Through the years, as has been noted, the accounting profession has developed

conventions and practices which have been validated by the tests of usefulness and practicability. Perhaps the most significant of all of these concepts is that of cost as the basic measure of economic potency. How better to determine the value of an asset than to measure it in terms of the exchange price agreed upon by two self-interested parties engaged in an arms-length transaction? Certainly, this is the epitome of economic significance objectively determined!

Turning to our second standard, we may now inquire whether the statistical techniques employed by accountants are sound. Investigation quickly discloses that accountants, having accurately recorded the cost of assets acquired—an impeccable statistical procedure—immediately forget that cost is something more than a mere number and, ignoring changes in the purchasing power of the monetary unit, assume that the recorded figure continues to be representative of the economic potency which it so accurately and satisfactorily measured at the moment of exchange. Consequently, in the subsequent preparation of income statements, accountants treat dollars of revenue which are expressed in units of relatively current value and dollars of cost of varying vintages, as though they were statistical equivalents. Some of these costs—wages, services, taxes, and the like—are also quite current; others, especially merchandise costs, are expressed in dollars of rather recent origin but sufficiently remote that distortions may occur, especially during periods of rapidly rising prices; still other costs, of which depreciation is the prime example, may be brought into the income statement expressed in dollars of as much as fifty years earlier. A similar mixture of dollars of varying purchasing power may be found in the typical position statement.

That a dollar is not a stable unit of measurement is all too apparent to anyone who has lived through the last two decades. Our experience with Series E bonds will prove the point adequately! After all, money is worth only what it will buy; it has no intrinsic value. It represents general purchasing power in a storable form. Dollars received or paid, as well as dollars of cost and revenue which originated at different points in time, can properly be compared only if there has been no significant change in purchasing power during the period or if the raw data are adjusted for the change. By deducting from current dollars of revenue a summation of costs expressed in dollars of various previous periods, one can arrive at a number. But what this number represents, even Solomon with all his wisdom, could not have known. Of one thing we can be certain. The number does not express income in current dollars.

Not only does the use of unadjusted data result in lack of comparability of revenue and cost figures; in addition, the validity of relationships among position

statement balances is destroyed because of the mixing of cash, receivable, liabilities, and the like, expressed in current dollars, with a hodge-podge of various past-period dollars representing inventory, plant, and equipment. Since the stockholders' equity account is a kind of residual balancing figure in the position statement, a question arises as to the significance of the number there displayed which reflects the net result of many charges and credits of heterogeneous dollars.

If, therefore, as appears quite obvious during inflationary periods, real net income is overstated because of failure to adjust costs to a common-dollar basis and if, further, real stockholders' equity is understated because of failure to restate the costs of certain assets in terms of current dollars, then the significance of the best available measure of business success—rate of return on capital invested—has been seriously impaired if not wholly destroyed. Under inflationary conditions, the lack of commensurability of income and capital results in a strong upward bias in apparent rates of return.

An especially misleading presentation of accounting data is that of comparative income and position statements, or excerpts from them. Typically, a ten-year comparison of financial highlights is presented in published reports. Under current practice, each year's data are expressed in part in dollars current at that time and in part in past-period dollars. But the reader of such a report almost unconsciously thinks in terms of today's dollars; the unwary are likely to mistake purchasing power changes for real growth in a situation in which physical volume and real income are, in fact, unchanged. There can be little doubt that comparative data must be expressed in terms of a common denominator if they are to avoid being misleading. After all, the very use of the word "comparative" suggests to the reader that the figures are truly comparable!

Recognition of the necessity of adjusting quantitative data to a common basis is not lacking in our economy. We would all be shocked if the Department of Commerce failed to convert gross national product and national income statistics into constant dollars. We are familiar with "cost-of-living" adjustments which have become a feature of labor-management contracts in some industries. The accountant is neither unaware of the importance of systematic conversion nor ignorant of the procedures involved. Witness his meticulous conversion of the account balances of foreign branches or subsidiaries so that they may be combined with the domestic monetary unit in which the accounts of the home office or parent are expressed. That this procedure is both appropriate and essential to accurate reporting should be apparent.

From the foregoing discussion, we may conclude that financial statements prepared during periods of changing price levels lack some of the economic significance which they possess during periods of monetary stability. What is recommended in this article is not a departure from the concept of incurred cost; rather, we suggest a departure from the use of the unadjusted monetary unit as a measure of cost, the better to prepare supplementary reports for management and stockholders which reflect economic reality and which provide the information essential to decision-making. Such a change does not imply subjective projection into an unknown future or a denial of the significance of objective evidence in accounting; it does suggest the need for simple arithmetical accuracy, which embraces statistical soundness.

### *Effects of Inflation on Current Monetary Accounts*

We now turn our attention to the effects that price level changes exert on the various types of accounts which comprise financial statements. For this purpose, we must focus our attention on the extremely important distinction between monetary and nonmonetary accounts. Monetary accounts in the position statement are cash and other balances which represent a claim to our obligation to pay a fixed sum of money. All other position statement accounts are nonmonetary. The income statement, too, is influenced by this dichotomy, since some of the factors which enter into income determination are monetary in character, primarily revenues and out-of-pocket costs, whereas others, notably cost of sales and depreciation, are nonmonetary. As one authority has observed:

> ". . . . the very essence of the general problem of ascertaining the effects of price level changes on financial statements is the measurement in some reasonably consistent manner of transfers in both directions between monetary and nonmonetary accounts." (Ralph Coughenour Jones, American Accounting Association, 1956, Effects of Price Level Changes on Business Income, Capital, and Taxes, p. 9).

### *Current Monetary Accounts*

In general the classification of current monetary accounts includes all current assets other than inventories and all current liabilities, though, as we shall observe presently, there may be a reasonable doubt that all these accounts are purely monetary. The dollars recorded in monetary accounts are real dollars, that is, they are homogeneous units. Dollars in the bank are always current dollars; a given dollar may command more or less goods at different points in time—hence, we may say that its value changes over time. But at a particular

moment any dollar has precisely the same value as all other dollars, no matter when it was acquired and no matter what it cost. Cash balances are continuously and automatically adjusting themselves so that they are always expressed in current dollars.

Similarly, receivables and current liabilities, being, respectively, claims to and obligations to pay fixed monetary sums, are always stated in current dollars without adjustment. These balances will, in the normal course of events and in the short run, be converted into cash or be liquidated by the payment of a fixed number of dollars, regardless of the value of money at the settlement date.

The status of marketable securities as monetary assets may in some cases require qualification. If the investments under consideration are government bonds or notes which will mature within the coming year, and hence will be converted into a specified number of dollars, no doubt exists: the item is purely monetary. However, in cases in which the securities are government bonds which will be disposed of in the market, the amount realized may be a sum which is different both from the cost and maturity amount, since these issues are priced on a yield basis and their market values may fluctuate quite widely in response to interest rate changes—changes more often brought about as a result of government monetary policy than through the market mechanism. To the extent that market fluctuations do affect the amount of cash into which the securities are converted, such investments are nonmonetary in character. Since, however, the investments here being considered are short-term by definition, we may conclude that treating them as monetary balances will not do violence to our general concept.

Current assets in the form of investments in stock, too, are often somewhat mixed accounts. Preferred stock investments, being money claims, do not pose a serious problem, though market speculation may induce substantial price fluctuations. In the case of investments in common stocks, there is a serious doubt that classification as monetary assets is appropriate, since these securities do not represent a claim to a specified sum of money and their market prices often move over a wide range. Since, however, few enterprises hold common stock investments as "marketable securities," the problem may, as a practical matter, be ignored in most cases.

On the liability side, too, some problems arise. A particularly difficult account to classify is "advances from customers." Whereas nearly all other liabilities are normally extinguished by cash settlement, advances are satisfied through delivery of goods or performance of service. Since inventory accounts, which will later be affected by the transaction, are nonmonetary, there seems to be some justification in regarding advances as nonmonetary, too; the fact that the

real value of inventories may properly be regarded as unaffected by price level changes adds credence to this position. On the other hand, advances are sometimes settled by the remittance of cash, and, in most cases, little time elapses between the date on which the deposit is made and the goods are delivered. In a few instances notably in the case of publishers of periodicals who accept long-term subscriptions, this matter becomes crucial. For the typical industrial or commercial enterprise, however, the amounts involved are probably not material.

As monetary balances automatically adjust themselves to changing price levels, their real values change along with variations in the value of money. Accordingly, we can properly say that gains and losses on monetary balances are inevitable during periods of inflation. Purchasing power losses occur through holding monetary assets during a period of rising prices; gains are made in liabilities, since the retirement of debt in a manner advantageous to the debtor obviously gives rise to a gain—in this case by paying dollars representing a smaller amount of purchasing power than would have been required had credit not been extended. The rate of loss or gain on monetary accounts is the same as the rate of price level rise.

The fact that losses on current monetary assets and gains on current liabilities occur simultaneously during inflation suggests that they should be offset and purchasing power changes computed on the difference between them. The balances in question are closely related; the assets are held in monetary form primarily to meet liquidity needs occasioned by the existence of the liabilities. Depending on the dollar amounts of current monetary assets as compared to current monetary position, any departure from a hedged position implies a willingness to speculate on the probable direction prices will move. If a hedged position is maintained, purchasing power gains or losses cannot occur, regardless of the movement of prices. If either a long or short position is maintained, either gains or losses are inevitable except in the unlikely event that the price level achieves perfect stability. We recognize, of course, the difficulty of achieving and maintaining a perfectly hedged position in view of the many commitments involved. However, since the risks involved in taking a nonhedged position in currency are not inherent business risks and can largely be avoided, there appears to be a presumption in favor of excluding purchasing power gains and losses from the computation of operating income and recognizing them in the income statement as a separate factor, if at all.

The question of whether or not purchasing power gains and losses should be reported in supplementary income statements hinges on the matter of realization. We must answer the query: when does realization occur? Does realization

of gain or loss on a particular asset depend upon its conversion to another type of asset? For example, must cash be expended before we may properly regard a gain or loss associated with a minimum required bank balance (or, for that matter, a normal minimum level of receivables and payables)? In our opinion, the kind of thinking which suggests questions of this type is overly oriented to consideration of particulars. In a practical business situation, we do not account for specific dollars by their serial numbers; rather, we are concerned about the results of the total activities of the enterprise. Further, it may be argued that, since cash is general purchasing power, realization immediately and automatically takes place in money balances when the price level changes. Conventionally we recognize revenues and expenditures when they have been reduced to cash or to cash claims. There appears to be equally good reason to recognize purchasing power gains and losses when they occur in these accounts. No purpose would be served by attempting to segregate realized from unrealized portions, especially in view of the rapid turnover of the types of assets involved. Of this we may be certain. Emasculation of capital because of currency deterioration is a real economic fact which must be recognized if the results of enterprise activities are to be presented fairly. The accountant cannot avoid this responsibility.

### *Effects of Inflation on Non-Current Monetary Accounts*

Non-current monetary assets are relatively rare and are not very important as a proportion of total assets in the typical firm. Long-term receivables and investments in bonds and notes of affiliated companies are sometimes encountered, and clearly are monetary in character. Investments in the capital stock of affiliated or subsidiary companies are clearly nonmonetary, since the claims which arise cannot be expressed as fixed dollar amounts. In some instances, even investments in the preferred stock of and advances to subsidiaries may be substantially nonmonetary if they reflect a portion of the total control and there is no intent on the part of the parent to convert the claims to cash.

In cases in which an enterprise has received funds through the issuance of preferred stock or long-term debt contracts and the funds are temporarily being held in liquid form pending their investment in plant, it is clear that purchasing power losses on the assets and gains on the equities are closely related. Under such conditions, the enterprise cannot realize net gain or loss; in effect the stock or bondholders are directly absorbing any loss which may result from inflation. A similar line of reasoning may be applied to the situation where

cash and securities are accumulated in a sinking fund to provide the wherewithal for preferred stock or bond retirement. Again it is obvious that these items are related and that, at least in part, the company is in a hedged position.

The most serious problems of purchasing power gains and losses in noncurrent monetary accounts revolve around long-term debt. The realization question here is a difficult one. Consideration of these problems will be deferred to the final section of this article.

### *Inflation and Inventories*

The business community has long been aware of the distortions in the calculation of net income which result from the impact of rising prices on business inventories. Economists and accountants alike have referred to "inventory profits," the phantom profits which need to be reinvested if a given physical level of inventory is to be maintained. Even the Federal government has given tacit recognition to these unreal profits through its recognition of "lifo" as an allowable inventory method for tax purposes.

Not all entities face an equally significant problem in the inventory area. The relative importance of the problem largely depends on the size of the inventory, that is, the relative significance of inventory costs in income determination and the rate of inventory turnover. In the case of merchandising concerns, for whom merchandise costs are by far the largest single cost factor, the effect of rising price levels on inventories and, hence, on earnings can be tremedous. Rapid turnover tends to mitigate the impact of inflation; high inventory levels and correspondingly low turnover rates compound the problem.

Though originally regarded as a reasonable assumption as to the flow of product cost, "lifo" has proved to be a reasonably adequate method of eliminating inventory profits from earnings calculations. Under the "lifo" method, revenue is charged with the most recently incurred cost unadjusted for purchasing power changes—a procedure which, however imperfect, is a move in the direction of using current cost in income determination. Conceptually this procedure is widely variant from that involved in adjusting cost for purchasing power changes, since "lifo" introduces into income calculation price movements in a specific commodity acquired prior to the statement date, whereas common dollar accounting adjusts all acquisition prices to the basis of money value on the statement date. During recent years, income results under these two methods apparently would have been similar, but the concepts of net income underlying them are poles apart.

Under a common dollar approach, cost of sales is restated by the application

of an appropriate conversion factor and that portion of cost which is unexpired and carried to the position statement is also converted to current dollars. This treatment does not preclude the need for an assumption as to the flow of cost; "lifo", "fifo" on average cost treatments might still be appropriate for different enterprises and would probably result in varying amounts of cost being assigned to revenues, since the movements of specific prices might not parallel general price level changes.

The most significant difference between common dollar accounting techniques and "lifo" as it is currently employed is in the treatment of residual inventories in the position statement. Under "lifo" this balance is composed of the oldest costs incurred for this class of asset expressed in dollars that were current at the time the cost was incurred. Obviously, the introduction of these extremely old costs into the asset totals causes a serious understatement of invested capital as well as total assets. In an effort to eliminate fictitious inventory gains from the income account, users of "lifo" assign opening inventory prices to the closing inventory. Applying current prices to the opening inventory would clearly give more meaningful results, but this would generally be regarded as a departure from the cost concept. That such a procedure would not, in fact, be a deviation from real cost has, we believe, been amply demonstrated.

### *Inflation and Plant Cost and Depreciation*

Inflation will normally have no effect on non-depreciable, nonmonetary assets such as land except to the extent that capital gains taxes may operate as capital levies at the time of disposition. The problems encountered in connection with depreciable assets, especially when investment in such assets is large, are difficult and important. Because the lives of some types of depreciable assets are extremely long, the discrepancy between original cost and cost adjusted for price level change is substantial. Similarly, there is a wide variation between the charge made to income on a conventional basis and that which results when depreciation charges are converted for purchasing power changes.

Within the last few years, the use of reducing-charge depreciation methods has been made available to business for tax purposes in connection with newly-acquired depreciable assets. Some businessmen apparently believe that this device is a satisfactory solution to the problem of inflation as it affects plant. That this belief is ill-founded can readily be demonstrated. It is true, of course, that the use of any of the new methods will result in bringing into the income account a larger depreciation charge than would have been made under a straight-line approach during the early years of asset ownership. Naturally, reported in-

come and tax liability are reduced accordingly. If, however, assets are not replaced sooner than was anticipated when service life was estimated and if the investment in depreciable assets is not being expanded regularly, the tax advantage will prove to be temporary; once the transition to reducing-charge methods for all assets has been completed, the tax saving stops. If, on the other hand, a firm continues to expand its investment in depreciable assets at a constant rate, it is possible to maintain a tax advantage indefinitely.

In any case, reducing-charge depreciation methods clearly do not adjust depreciation charges for price level changes; obviously a tax gimmick, they have become popular because of the short-run tax advantage they afford and not because they contribute to the ideal of accurate reporting. There can be no doubt that the use of any of these methods brings about a great discrepancy between asset book values and invested capital amounts as reported and those which obtain when common dollar conversions are applied. For the sake of a larger current charge in the income statement, the significance of the position statement is sacrificed, in much the same manner as in the case of "lifo." Common dollar techniques solve this dilemma; expired cost is expressed in dollars of the same purchasing power as revenue and all other costs, and the integrity of the position statement is maintained.

Much confused thought on the subject of depreciation results from failure to distinguish clearly between depreciation accounting—the process of separating expired from unexpired costs—and the matter of asset replacement. Depreciation and replacement are related in the sense that assests would not need to be replaced if they did not lose their economic potency. But the level of current replacement expenditures is not a satisfactory standard by which to judge the adequacy of depreciation charges. Asset replacement is essentially a financial management function and not a function of depreciation accounting.

The failure of depreciation charges to reflect the real cost of asset utilization is especially crucial in the case of railroad and public utility companies. Whereas unregulated industrial companies are not prevented from adjusting their selling prices in the light of increasing costs, these regulated enterprises, which are characterized by large investments in depreciable plant, are prevented by the commissions from raising their rates in accordance with the movements of prices generally. Since the rate-making base is almost universally determined in terms of "original" cost, regulated companies are limited to a fixed dollar rate of return. This means that plant investments of such companies are treated, not as nonmonetary investments but as though they are monetary in character. That this practice works out to the disadvantage of investors in regulated industries should be immediately apparent.

### A Note on Index Numbers

The validity of data prepared in accordance with common dollar accounting techniques obviously depends in part on the accuracy and reliability of the index series employed. An extremely important initial decision must be made as to whether a broad general index number or a group of narrow specialized index series would be more appropriate. The solution to this dilemma may best be found by determining what purpose is to be served through the conversion process. Converted historical cost of most assets has an entirely different meaning when a special-purpose index number has been applied than when a general index has been used. Specialized index numbers focus attention on price dispersions rather than on general price level changes; they emphasize capital in the physical sense rather than in the accounting sense; they speak of current replacement cost more than of adjusted incurred cost.

Investors are more concerned with the preservation of the general purchasing power of their investments than with the technical form of their investments. Business management can hardly be expected to foresee price movements in specific commodities and elements of plant; it is not, however, unreasonable to expect that management should conduct the affairs of the business in such a way that the general purchasing power contributed by investors will be maintained. Our position, then, is that general index numbers should be used to eliminate the effects of inflation from financial statements. As to which available index number best reflects changing economic conditions, we shall express no opinion.

It should be clearly understood that the above discussion is not intended to deny the usefulness of specific index numbers and of replacement cost information as a basis for managerial decision-making. In connection with pricing policies, plant management, expansion policies—as well as in other fields—replacement costs are significant and should be made available to management. For purposes of financial reporting, however, we believe that general purchasing power considerations are all-important.

### A Post-Script on Long-Term Liabilities

In our earlier discussion, we have indicated that purchasing power gains are inevitably made by debtors during inflationary periods. We have further expressed an opinion to the effect that such gains are, for all practical purposes, realized as they accrue in the case of current liabilities and, accordingly, should be displayed in the income statement, together with purchasing power losses on current monetary assets. Turning our attention to the subject of long-term

debt, we are again faced with the questions of whether such gains are realized and, if so, when and by whom and the problem of how the gains can best be presented in the financial statements. Changes in the purchasing power of debt contracts must be computed in the course of restating the accounts in uniform dollars; consequently, the issue involved in disposing of reconciling factors cannot be avoided if integration of the major statements is to be maintained.

A debt may be regarded as a short sale of dollars; it is a contract to deliver dollars in the future. Realization can occur only when the delivery of dollars takes place; prior to the retirement of the debt, any gains which may be recognized are obviously unrealized. While the debt remains outstanding, gains related to it should be regarded as capital adjustments; they cannot properly be reported in the income statement even as non-operating gains. When the debt is actually retired, it seems reasonable to regard the purchasing power gain of the year of retirement, as well as all previously recognized but unrealized gains associated with the debt, as having become realized.

There are, however, circumstances under which realization may be doubtful, even under the conditions described. Since the circumstances to which we refer are most likely to obtain in the case of public utility companies, problems involved will be discussed within that framework. The reader should recognize, however, that some of the observations which follow are also appropriate for industrial enterprises which include funded debt among the equities.

For utilities generally, funded debt is a permanent feature of the capital structure. Specific issues of bonds are, of course, retired from time to time but usually a refunding occurs. The long-run trend appears to be that utilities increase the total of their outstanding debt as time passes. This tendency toward increasing debt financing is not surprising in view of the fact that utilities are prevented by rate ceilings from generating sufficient funds through operations to finance expanding plant requirements. When a portion of outstanding debt is being retired, a difficult problem may arise in connection with determining the amount of purchasing power gain which has become realized through the retirement.

Especially in cases in which retirements are made on a serial basis or a part of the bonds issued under an open-end mortgage are involved, a decision must be made as to which bonds are being retired so that the realized purchasing power gain may be isolated. The computation may be made in a number of ways—on the basis of specific identification, on a "lifo" assumption, on a "fifo" assumption or on the basis of the average amounts paid in. As in the case of inventory accounting, a case can be made for each of the available methods in some circumstances. But, if the retirement does not bring about a reduction in

the total debt outstanding (and this is a typical situation with utilities), can we then say that any of the unrealized gains has been realized? In such cases, it would seem that purchasing power gains in terms of specific securities have little real significance. The common stockholders of public utilities may find it impossible ever to realize gains on funded debt.

Since, however, the bondholders have suffered a purchasing power loss on their investment, someone must have realized a gain during the time that the bonds were outstanding. If not the corporate shareholders, who did benefit from the effects of inflation? The answer to this question would seem to be that the government has shared in the gain through income taxes which are, in effect, capital levies and that the public has been a beneficiary through being charged rates substantially lower than would be necessary to cover all the real economic costs of the services being provided. It should be obvious that this results in serious inequity toward common shareholders of public utilities.

As has been noted earlier, public utilities find themselves in the unfortunate predicament of being unable to maintain a position in nonmonetary assets (which naturally serve as a hedge against inflation) because the effect of rate regulation is to transform assets which are nonmonetary in name into assets which are monetary in fact. It follows that utility companies are subject to a double squeeze. On one hand, they cannot realize purchasing power gains on debt because they cannot permanently reduce their outstanding debt and, on the other hand, they cannot protect against inflation by investing in assets the real values of which tend to move with the rising price level.

Only during periods of recession are public utility companies likely to find it possible to effect a reduction in total funded debt, since it is during times of slackened activity that funds in excess of those required for plant replacement and expansion become available for the purpose. Deflationary periods are, of course, associated with falling price levels and they suggest purchasing power losses rather than gains on outstanding debt. This fact makes all the more unlikely the prospect that purchasing power gains which have been accumulated but unrealized during inflation will ever be realized by the company.

As to the treatment of gains and losses in the statement, we would argue that only in cases where specific bonds have been retired and concurrently total debt has been reduced should gains and losses be regarded as finally and conclusively realized, and reported in the income statement as a factor in the determination of total enterprise results as they affect the residual stock equity. In all other cases, we believe, both gains and losses should be treated as unrealized and should be used as a reconciling item for capital balances on a common dollar basis.

# Control of Cash Payroll and Unclaimed Wages

by G. H. BURKHARDT*

TO "SMOKE-OUT" on the handling of cash payroll ideas, the following is descriptive of what we do. It may give others who handle cash payrolls some food for thought and, we hope, lead them to share their ideas with us.

First of all let us review our system of preparing and delivering cash pay envelopes. Our timekeepers, who carefully gather source data from time sheets, time cards, and foremen's daily reports, are the messengers of the payroll department. Timekeepers patrol factory departments daily in dozens of buildings spread over miles of area—the same area later traversed by payroll cashiers who deliver the individual pay envelopes. Source data, such as time cards, foremen's daily time sheet, absentee reports, etc., is used by the payroll department to compute wages payable. The completed payroll journals and fully-prepared pay envelopes are then delivered to the factory cashier. The key control at this point is the fact that the two departments are not related to each other; each reports to a different manager; neither department head has access to the files of the other, nor do they assist each other at any time or under any conditions.

Before the prepared payroll envelopes are delivered to the factory cashier, the stub end of the envelope is removed by a machine cutter. This stub contains information identical to that which is shown on the envelope. It is used to identify the employee to whom the cash payment is to be made. The payroll department forwards all pay stubs to the general foremen who, in turn, distribute them to shift foremen who are charged with the specific responsibility of delivering each stub to the individual worker without exception. Records are kept by general foremen and shift foremen as the relay progresses. A factory cashier appears weekly at a given location on an established date and at a prescribed hour to distribute cash payroll envelopes to the workers in the area. The worker is required to relinquish the signed stub in exchange for his cash pay envelope.

If workers are absent when foremen distribute pay stubs, it is a requirement that foremen deliver the stubs to the personnel service department. It is particularly important that the stubs never get back to the originating payroll department nor to the cashier's department. This prevents the originating department from revising

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the amounts after having made a previous reconciliation and accountability of wages payable, and it prevents any employee in the cashier's office from obtaining control of both cash and pay stubs. An established time requirement to return unclaimed pay slips to the personnel service department eliminates careless handling by the foreman and removes the responsibility that is his when the pay stubs are in his possession.

The personnel service department can safely identify any employee who requests his pay stub and, psychologically, the requirement to have employees go to the extra trouble of contacting the personnel service department for late receipt of pay encourages most of them to do everything in their power to be on hand at the time of distribution by the foremen.

In spite of our rigid control, timing and performance, we find we are still harassed with unclaimed wages. When a worker is absent or fails to contact the cashier, the cash pay envelope is returned to the cashier's office where it is held until the worker personally appears to redeem the envelope by presenting his pay stub. Believe it or not, many workers *deliberately* delay obtaining their cash pay, thus using the cashier as custodian or their "savings" until they need immediate cash. We daily safeguard thousands of dollars in unclaimed wages. Unclaimed cash wages are held 30 days by the cashier, after which the cash is deposited and credited to unclaimed wages account. During this period the personnel service department makes every effort to contact the employee and have him collect his wages.

As long as we have a cash payment program we must reconcile ourselves to the dangers of handling and delivering sizeable cash payrolls. Briefly, we must observe the following rules:

1. Always use appointed messenger service, never the company mails, to deliver pay stubs.
2. Deliver stubs to approved listed personnel—not to clerks, stenographers, or other department employees.
3. File unclaimed stubs in strict date sequence, numerically by department and payroll number.
4. Maintain prompt and constant follow-up of workers who have not collected their wages.
5. Make prompt deposit of unclaimed cash after expiration of the prescribed holding period.
6. Carefully control the unclaimed cash and unclaimed wages account by frequent inspection by auditors or key personnel in the main cashier's office.

# The Self Limitations of Accounting

by GERALD CROWNINGSHIELD and GEORGE L. BATTISTA

ALTHOUGH HE IS PRONE to extoll their virtues and seldom refers to their shortcomings, every accountant must recognize that accounting data, as one of the tools of management, have serious deficiencies and limitations. Like the religious man who from time to time humbles himself before his Creator and searches his soul for his sins of omission and commission, so should the accountant take time from his work on the journals and ledgers and ask himself if his methods are as perfect as a human being can make them. If he does so, he will be forced to admit that they are not. Although he may say, "I have done a good job," he cannot say "I have done the best job."

Accounting data can be useful only if they are properly prepared and properly used; they can be harmful if they are improperly presented or misinterpeted. Accounting data can be compared with certain drugs that can effect a cure or alleviate an ill when they are prescribed by one who is familiar with their properties but are poisons if administered by someone ignorant of their uses and dangers. As the patient relies upon the wisdom and skill of the physician, so must the reader of accounting reports rely upon the wisdom and skill of the accountant. If the accountant states without qualification that a product cost $6.99 per unit, then management is left to presume that the cost is $6.99. If the accountant reports without reservation a certain profit or loss for a period, then that can only be accepted as the profit or loss for that period.

Unfortunately, those who use accounting data are seldom those who are trained in the intricacies of accounting theory and practice and, consequently, do not recognize its limitations. More unfortunate is the fact that accountants do not always present their data with this in mind. Estimates are presumed to be facts; assumptions are confused with precise measurement; data collected under one set of circumstances are applied under entirely different circumstances. As a result, accounting not only fails to measure up to the performance that could be expected of it but also inadvertently distorts what it is trying to say.

Some of the limitations of accounting data are inherent in the nature of

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accounting itself. Accountants have all the shortcomings associated with the human mind and, since accounting is an art and not a science, accounting principles must be developed through empirical reasoning. Unlike the scientist, the accountant cannot test his theories in the laboratory. He can only submit his ideas to the consideration of fellow accountants and the acceptance or rejection of these ideas, in turn, cannot be based on scientific measurement. Often the accountant finds himself in the position of not being able to prove that he is right, yet no one else can prove that he is wrong.

No just criticism can be directed against the accountant for his inability to find completely satisfactory answers for all of the questions that will be put before him, if he is honest with himself and honest with the readers of his statements and reports. No objection can be fairly raised if he acknowledges frankly what he can and cannot do, for this acknowledgment will prevent his data from being misused. Criticism can be leveled against him if he pretends to possess a clairvoyant insight that permits him to secure the unobtainable, such as *the* cost of one of many products jointly produced or *the* net profit on its sale. He can be condemned if he allows himself to get "stuck in a rut," if he follows a line of least resistance, or if he fails to keep the validity of his methods under constant questioning.

### *Elusiveness of Accounting Principles; Tax Impact on Practice*

Costs and profits are not computed under a rigid set of rules that have received universal acceptance. Accounting operates under a flexible body of dogma, conventions, precedents, and doctrines which, taken together, make up what is referred to—often rather loosely—as "generally accepted accounting principles." To find these principles, one must search through accounting literature and reconcile conflicting opinions. No professional society has been able to eliminate differences of opinion. "Generally accepted accounting principles" that permit Company A to carry its inventories at "fifo" cost permit Company B to carry its inventories at "lifo" cost and allow Company C to depart from the cost principle and reduce its inventories to market. Even though the three companies have recorded identical cost in purchases, three different gross profits are permissible on the income statement. No attempt to adopt a uniform set of rules has met with success. Even the research bulletins of the American Institute of Certified Public Accountants "rest on the general acceptability of the opinions reached."

Accounting principles have not been developed by accountants free from outside influence. New principles are not thought out in cloistered solitude but

in the reality of the market place, and they reflect the thinking, the whims, and the prejudices of those who transact business there. Since law permeates business transactions, it must likewise permeate accounting practice. Regulatory bodies, such as the Securities and Exchange Commission, with power of government behind them, have dictated in some cases what shall be acceptable in practice. The economist, interested in much the same general area of study as the accountant, has made substantial contributions to accounting principles. The influence of the statistician and the industrial engineer has begun to show in the field of cost accounting. Wherever they have appeared, the economist and the industrial engineer have brought improvements.

In recent years, income-tax regulations have exerted a tremendous influence upon the determination of net income, and undue influence in the opinion of many accountants who think that their independence is being encroached upon. In 1953, the Committee on Concepts and Standards Underlying Corporate Financial Statements (American Accounting Association) wrote:

> "The tax laws have unduly and unintentionally tended to influence the development of corporate accounting in that to some extent legislative counting practice without justification in principle." (*Accounting Review*, October, 1952, p. 429.)

The committee cited as examples the installment bases of reporting income and the practice of accelerated depreciation charges. In 1958, the National Association of Accountants published a research report entitled *Current Practice in Accounting for Depreciation*. The report notes that, prior to 1954, all but three of fifty-five companies studied used the straight-line method of depreciation almost exclusively, both for taxes and for accounting purposes. The Revenue Code of 1954 led most of these companies to review their depreciation methods for tax purposes. Forty of the fifty-five companies elected to adopt declining-charge methods; only fourteen companies chose straight-line and one company adopted the units-of-output method. The report makes this comment:

> "Without doubt, administration of the Federal income tax has long been, and still is, the dominant influence in practices employed in accounting for depreciation cost. While rules established for administration of tax laws do not govern reporting of income to stockholders, practice in accounting for depreciation conforms very clearly to tax practice." (N.A.A., Research Series No. 33, p. 20.)

There is reason to believe that the increase in popularity of "lifo" as an inventory method more often stems from the tax savings it seems to offer than from a firm conviction that this method provides a better matching of cost

and revenue. The authors have attended many cost forums that started out as discussions of costing methods and soon "degenerated" into discussions of the most recent income tax law.

It is easy to understand, if not excuse, the accountant's adherence to tax law as a matter of convenience. It is easy to understand management's desire to minimize tax payments through accounting methods. It is regrettable, none the less, and bodes no good for the future of accounting. It is distressing to find accelerated depreciation "taking over" and to find objections being raised to new concepts—direct costing, for example—because the concept is not acceptable under the present revenue code. The accountant is charged with submitting correct cost and profit data and his methods must be based on sound theory, not on a tax law that was written by legislators under the influence of pressure groups and then rewritten to plug the loopholes they had overlooked.

### *Conservatism and "Ostrich-ism"*

Some of the limitations of accounting data stem from the accountant himself, from his natural conservatism and his reluctance to throw off the smothering cloak of convention and tradition, from his devotion to what has happened in the past, because he lacks the courage or knowledge to predict what may happen in the future, and from his failure to keep abreast of what is happening around him, both in the business world and in his own plant. For these limitations the accountant cannot be excused; they are too easily corrected. Conservatism is a doctrine in point. Many of the accepted accounting principles were established in an era when the balance sheet was thought of as a statement of financial condition and considered to be the most important financial statement. "To err on on the safe side" appealed to the banker and to the credit man who were by nature cautious and suspicious. Under their influence, the doctrine of conservatism took root and flourished. The accountant adopted conservatism as something sacred, a law unto itself. With the income statement replacing the balance sheet as the more important statement and with the emphasis being shifted from asset valuation to profit determination, the doctrine of conservatism needs re-examination. Conservatism is hardly a valid reason for justifying any procedure when one is looking for correct valuations and correct profits. Not only is conservatism invalid as support for an established practice, it is dangerous.

Failure to keep abreast may also be laid at the accountant's door. A speaker at an N. A. A. technical session pricked the conscience of his listeners when he said: "I won't embarrass you by asking for a show of hand to find out how

many here have read an economics book with 'guts' in it during the last year." During his talk, this speaker took his audience to task for their failure to become an active part of management by participating in such activities as sales forecasts.

### *Over-Emphasis on Financial Statements and Historical Costs*

Accountants have also been justly accused of placing an undue emphasis on the end result of accounting—the financial statements—at the expense of producing pertinent, usable, day-to-day accounting data. Every entry is judged by its effect on the balance sheet and the income statement. All recorded data must be made to conform to "generally accepted accounting principles" and must satisfy disinterested auditors who will be asked to certify to the statements. Too little attention is paid to data specially designed for special situations. The financial statements adequately serve the purposes for which they are written but they were not written for management. "In its present form, it (accounting) is intended to protect, not management, but the casually interested person, the banker, the creditor, and the stockholder—people who cannot watch the day-by-day movements and who must be content with generalized comparisons usually available once a year." (Fred V. Gardner, Profit Management and Control, McGraw-Hill, 1955, p. 269.)

Accounting data must serve many different purposes and the data that are derived to meet one purpose will not serve all others. In buying a suit of clothes, you ask for a certain size because that size most nearly conforms to your measurements. When you try it on, you find that it does not fit entirely to your satisfaction because it was not made with you in mind. It was made for a number of people of about the same size who might want that style and color. Before you can wear it, it must be altered. So it is with accounting data that were compiled primarily for the financial statements. Before they can be used in a managerial problem, they must be tailored to fit that problem and the tailoring may require discarding some of the "generally accepted accounting principles" and conventions.

Although recognition of the fact is not always present in practice, it is obviously impossible to compute one single cost that will adequately serve widely divergent purposes. It is true that tools designed to do a certain job are often used on jobs for which they are not intended and that, after a fashion, the jobs are completed. There is no denying, however, that the right tool simplifies the work or that the use of the wrong tool usually shows up in the finished product. It is possible to cut linoleum with a pair of shears meant to cut cloth. A lino-

leum knife will do a better job and will leave fewer blisters. Accounting data collected for the preparation of financial statements may properly be used on the balance sheet and profit and loss statements and tell the story they were meant to convey. Costs determined under conventional accounting concepts cannot be used in solving such problems as whether the sale of a certain product should be discontinued or whether certain equipment should be replaced. To the contrary, as raw accounting data, they can lead to a wrong decision.

Stemming from the emphasis on the financial statements is the accountant's devotion to historical—or, as he sometimes mislabels them, "actual"—costs, and his insistence upon using objective, verifiable evidence to support and back up his figures if such evidence can be obtained. When the accountant is finishing his reports for the last quarter, management is making its plans for the next quarter or the next several quarters. Yesterday's figures are of little help in preparing tomorrow's plans. Knowledge of what has happened in the past is of value only to the extent that it may be used to predict what may happen in the future. Historical costs serve a purpose only if they provide help in charting some future course of action. If the accountant concentrates solely on the accumulation of dead historical data for the financial statements and ignores management's need for live data of what may happen in the future, he is no more than a scorekeeper of a game that has already been played. At best, he has expressed an opinion of the results of yesterday's performance for what it may be worth in plotting tomorrow's strategy. Unfortunately for the usefulness of the accountant, tomorrow is seldom the same as today.

Although historical costs may have a place in the accounting scheme, they are not entitled to a priority nor can they be ranked as the most important. They must share their place with estimates and standards, with budgeted costs and replacement costs, with variable costs and sunk costs. Historical costs are seldom informative costs. What it will cost to replace an asset is more informative to management than the cost of the asset when it was purchased; the cost of merchandise that has been sold is less important than the cost that will be paid when the stock is replenished; knowing what a product should have cost under efficient operating conditions is more useful than knowing what the product did cost under existing conditions; a statement showing the variances from predetermined standards is of more value in cost control than a statement showing "actual" cost accumulated; direct variable costs of the product are more informative in some pricing decisions than total costs; sunk costs are necessary in decisions involving asset replacement.

It is easy to understand and excuse the public accountant's worship at the shrine of historical costs. He is responsible for the accuracy of his figures to

all who may read his statements—the stockholder, the employee, the taxing authorities, the creditor, even the prospective investor who might risk capital in the enterprise. Naturally, the certified public accountant is wary of speculation and estimates and distrustful of standards and appraisals. It is harder to understand the same attitude on the part of the internal accountant, who is responsible only to management. He can, if it seems desirable, label his cost data "for internal use only; use only as directed." He can, if the problem calls for it, add imputed costs, substitute replacement costs for historical costs, or ignore the fixed costs and sunk costs. If accounting is to produce the benefits that can be expected of it, the accountant must turn aside from the auditor's "generally accepted accounting principles" and look to the industrial economist and the industrial engineer. He must independently reexamine the postulates and conventions under which he has been determining his costs and other operating facts and broaden his thinking to include their concepts.

### *Under-Emphasis on Management Accounting*

Cost accounting has been described in terms which suggest that it is primarily an aid in certain areas of financial accounting. Under this description, the primary function of the cost accountant is to produce costs so that the inventories and cost of sales can be determined for the financial statements. The cost accountant is expected to take from the general records the expenditures for materials, labor, and overhead and return in their place costs to be assigned to the inventories of work-in-process and finished goods and to the cost of sales. This is placing the emphasis in the wrong place. Accumulation of product costs for the financial statements is incidental and secondary to the accumulation of cost data for managerial use.

The primary duty of the cost accountant should be to determine cost data that will be useful in solving the day-to-day problems involving budgeting, pricing, profit analysis, and cost control. To achieve the ultimate in utility, cost accounting must not only re-examine its own methods, it also must redirect accounting instruction in the schools of business administration. College instruction is now oriented to the training of certified public accountants. Few college accounting courses, as they are now being taught, can turn out the raw material from which superior cost accountants can be made.

### *Pretended Accuracy; Failure to Consider Dollar Decline*

Historical costs are sometimes wrongfully presumed to be accurate costs.

Accurate costs cannot be had. Accurate costs exist only in the imagination of the accountant who is unaware of his own limitations or who is too conceited to recognize them. "All accountants know that the superficial exactness of bookkeeping data is highly deceptive. The machine grinds out only what is fed into it, and every company's accounts are as fallible in content as they are unimpeachable in method." (Howard C. Greer, "Let's Have the Story—Quick," *N.A.C.A. Bulletin*, December 1955, p. 502).

Complex methods and results achieved through elaborate formulas can easily lead to a false sense of preciseness, especially if the procedures are of long-standing usage. Accounting data are mixtures of fact, convention, opinion, tradition, and judgment. As such, they can be no better than the opinion and judgment of their maker and the validity of the postulates under which they were obtained.

When an accountant says that the profit for a given period was *X* dollars, he is only saying that, within his ability to match cost and revenue under existing accounting methods, *X* dollars is the difference between revenue and cost; when he says that a product cost *Y* dollars, he is saying that, if certain assumptions are made and certain conventions followed, *Y* dollars is the cost figure that results. He has measured where precise measurement was possible, he has resorted to allocations and apportionments where no method of precise measurement has been discovered. The cost of merchandise purchased is known from the invoices. The cost of sales can be determined only after an assumption on the flow of costs has been made and an inventory method adopted. Labor hours can be measured and applied to specific orders but what should be done with idle hours? Overhead can be assigned only by arbitrary allocation and apportionment. Someone has described cost accounting procedures, pointedly if irreverently, as follows: material and labor costs are computed to the nearest penny, but overhead is spread on with a shovel.

Historical costs are misleading costs. The conventional practice of using dollars as a common denominator has resulted in the overstatement of profits which has, consequently, led to excessive capital expansion, a false sense of security, and the outward appearance of a non-existing state of prosperity. It has contributed to the progress of inflation, has allowed marginal corporations to survive, and has been responsible for the dissipation of corporate capital through excessive dividend distributions. Demands by labor leaders for higher wages based on reported earnings is evidence of the contribution to inflation. Failure to recognize changes in price levels stems from the narrow interpretation afforded the "cost concept" and the standard of "objective verifiable evidence."

A broader interpretation of these concepts might open the door to better reporting.

### The Late Accountant

If the accountant insists upon playing the role of the meticulous historian who must wait until he has gathered all the facts before he publishes his findings, accounting data are going to be reported too late to be useful in planning and control. Accounting data are useful to management only to the extent that they are pertinent, significant, and timely. Today's problem must be solved with today's information. A solution cannot be postponed until the entries have been posted, the trial balance taken, and the cost sheets brought up to date. If cost is a factor in setting a selling price, the ascertainment of cost cannot follow the sale. Accounting data have lost their value if they are available only for the post-mortem examination.

Accountants argue that assembling accurate figures is time-consuming and seek to speed up the bookkeeping processes. Management replies that perhaps accountants should re-examine not their bookkeeping methods but what they are trying to report. In discussing accounting reports, the president of a steel company has written:

> "For one thing, information supplied to management must be accurate. However, this requirement does not preclude the inclusion of reasonable estimates in its preparation. The accuracy which management requires is only that which permits it to reach sound conclusions and made sound decisions."

### The Guarantee of Failure — Opposition to Change

It is obvious from the foregoing that accounting, as it is being practiced today, has its shortcomings. The most flagrant of these weaknesses is the accountant's failure to recognize the ultimate objective of his efforts and, in many instances, when the purpose is known, his tendency to accept the procedures used—good or bad—only because he is inherently opposed to change. It is the opinion of the authors that present-day accounting thought should be carefully examined with an eye toward determining objectives and devising a set of determinants by which these objectives can be achieved. The rules should be flexible enough to allow each case to be judged on its own merits and the influence of regulatory bodies, tax authorities and local law should play no part in the accounting process. Cost accounting should be a field in itself. It should be an adjunct of general accounting only to the extent that it is to provide data for the financial statements.

# Manufacturing Enterprise in Sao Paulo

by CHARLES LAWRENCE*

I AM ON ASSIGNMENT to the University of Sao Paulo for two years as a technical consultant in accounting and financial administration. The following observations made on a recent plant visitation may be of interest to accountants in the U. S. A.

The establishment is a well-run medium-sized shop (large for Sao Paulo) which was started fifteen years ago. It has grown in physical dimensions by tenfold. The management is Brazilian and it is a "national" company. It enjoys high profits and is progressive; the leadership is dynamic. The plant was started in a small residential district. There are no zoning laws as such, but there is much administrative procedure where commercial building is concerned; we would call it "red tape". As a result, this plant is situated on what is supposed to be a number of residential lots. All of the plant has been constructed by the workers in the plant. No building permits have ever been applied for and there is no existing overall plan of the plant. There are some accurate sketches of particular parts of the factory that will be subject to changes in the near future. There is no central heating and little light but plenty of "air conditioning."

The equipment situation is largely characterized by the word "cosmopolitan." This plant makes farm wagons as a major product. There are ten lathes in this plant; nine countries are represented by these lathes. Each lathe works in a different manner, does a little different work and requires separate types of maintenance. If a tool is not available for shop use, the company stops production and builds it, if possible. The heart of this shop is literally the men in the machine tool room who can and do build entire separate machines to aid production.

Management has hired the most intelligent workers it could find. Then it hired a public school and sent the key workers to that school so that all could learn to read and write. As a result, in some key departments and among the foremen, nearly 80 per cent of the men can read and write. Most plants are not so well supplied with literate workers. In order to get the machine tool room to its present level, additional courses were instituted so that the literate workers in this room could read a blue print and follow written instructions. In this endeavor the company has been successful. There is no strong labor union in Brazil; however, if a worker works longer than a short probationary period, he must be paid a month's extra salary for each year worked if he is to be discharged. If he works more than ten years for one company, he *cannot* be fired.

As in the United States, so in Sao Paulo much of the delay is caused by lack of materials. This plant solves the situation by making diversified items. It has more or less of the whole plant set up for different items at the same time. However, only about 60 per cent of the labor force is working at any given moment and, thus, about 60 per cent of the machines. When a material shortage develops, the men stop one line of activity and start another. When material for the first appears, work on it is resumed, the second being laid aside until the first job is complete. In other words, the problem of lack of material is solved by diversification of jobs, using change of labor force between jobs as the medium of solution.

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# Applying Sound Principles To Equipment Replacement Practice

by PAUL A. LAEDERACH

THE PURPOSE of establishing a practical equipment replacement program is to provide the means by which management can own, operate and replace expensive capital equipment at minimum cost—an optimization of the value received from each machine-invested dollar. In spite of the seemingly obvious benefits to be derived from such a program, the application of economical equipment replacement principles is relatively limited in comparison to the size of the cost control programs applied to production, inventory, quality and manufacturing processes. This is indeed an unfortunate situation, not only from the standpoint of company security in a competitive market but also from the standpoint of national security, both military and economic, in a competitive world. It is unfortunate because a company looking forward to a prosperous future may have a tendency to go all out for expansion investments at the expense of economically maintaining the "bread and butter" line, and economic war cannot be successfully waged with deteriorated or obsolete equipment. The times are such that management must realize the necessity and responsibility for maintaining efficient, modern and economical production equipment.

Assuming that managements do sincerely desire to take full advantage of their machine-invested dollars, how do they proceed to establish a sound replacement program? Perhaps the most obvious answer is to review and evaluate the large volume of books, articles and papers which have been written on the subject. While this approach can be very rewarding, it is also quite confusing. It is confusing, first, because of the unwieldy volume of literature to consider; second, because of the many, many minor variations of a few fundamental economic principles; and third, because of the conflict between authorities as to what makes a good program and what does not. The underlying purpose of the article is to condense the volume and variations into a fundamental package and to minimize conflicting theories by placing them in one big barrel and objectively drawing out the best that each has to offer, at least in the judgment of the author. It must be understood that there are no black and white

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answers to equipment replacement problems; there is no one system for evaluating each and every investment proposal.

Any replacement program aimed at achieving optimum equipment economy must encompass the following points, which will be discussed in turn:

1. Rate of return analysis.
2. Economic life.
3. Profit maintaining or profit adding.
4. Use of the rate-of-return index.
5. Evaluation of risk.
6. Planning and budgeting.

### *Rate of Return Analysis*

A replacement program is only as good as the method employed to evaluate the profitability of capital expenditure proposals. The choice of method is an important one; a poor method will deliver unreliable and uneconomical results while a good method, coupled with a healthy dose of sound business judgment, will ensure maximum value. After plowing through article after article on replacement analysis methods and after sifting out all the emotional, illogical and prejudiced trimmings, it appears that there are three basic methods of evaluating the profitability of one proposal over another: annual cost, present worth and rate of return on extra investment. These methods, as presented by Eugene L. Grant in *Principles of Engineering Economy* (Ronald Press 1950), have, in my opinion, successfully withstood the barrage of criticism and challenges thrown out by proponents of other methods. All three methods, when intelligently applied, are equally reliable, but the rate of return approach offers an additional advantage of delivering an answer in terms of a dimensionless index which can be used to measure the relative profitability of many expenditure proposals and thus make it easier for management to make proper decisions as to where the capital can best be invested.

There are many methods which go under the guise of rate of return, but there is only one method which accurately and reliably measures the true rate of return. A true rate of return is calculated by discounting future savings to present values and by multiplying these savings by present worth factors (from interest tables) for various trial interest rates. The true return on investment is then determined by interpolation so that the sum of the present worth of the savings is equal to the present worth of the required investment. This is basically Joel Dean's method of *discounted cash flow*. Another variation is Ray I. Reul's *profitability index* where a ratio of present worth of savings to investment is calculated for several trial interest rates and plotted on graph paper. The true

rate of return is determined by the intersection of the curve and the 1:1 ratio line.

Perhaps the only serious challenger of the rate of return method is the widely publicized formula proposed by the Machinery and Allied Products Institute. It is interesting to note that the M.A.P.I. formula has been recently up-dated to incorporate a rate of return into its calculations. While the formula has many advantages which could profitably be made a part of other methods, it is misleading to assume that the M.A.P.I. return is as reliable as the present worth rate of return previously described. Several test examples showed that, for high rates of return and/or very long primary service lives, the M.A.P.I. return is reasonably accurate but, for short service lives (under 10 years) and lower rates of return (under 15%), it does not accurately reflect the profitability of an investment.

One final point. There are no shortcuts to reliable answers; reliability cannot be mass-produced. Do not choose a method because it is advertised as being simple and fast. Anyone who has worked on replacement analyses will testify that 90 per cent of all effort is directed at accumulating cost histories and in making forecasts of anticipated costs; this holds true for all methods. Once these costs are determined and savings calculated, it takes only fifteen to thirty minutes to manipulate the data and calculate a rate of return for an average machine replacement analysis. A savings in time of five or ten minutes is unimportant in relation to the reliability desired.

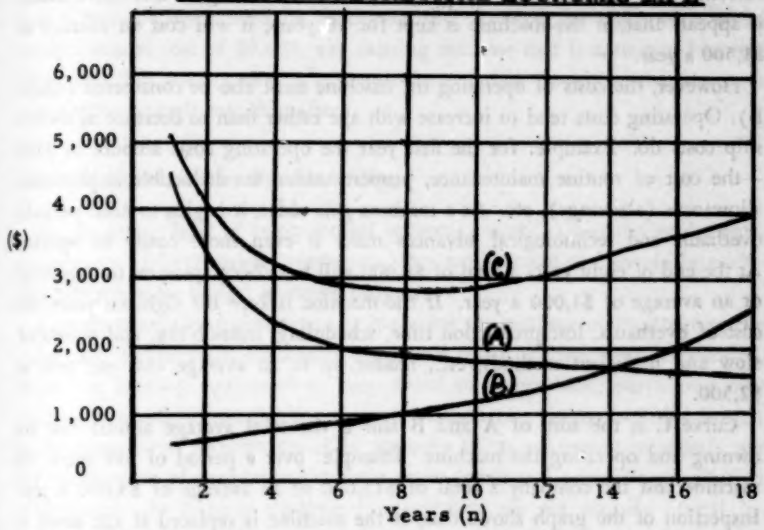
The rate of return approach to investment profitability analysis, when calculated from present worth interest tables, is as reliable a method as can be found. It also makes it easier for management to decide where to invest its limited capital for the most profitable return on investment by automatically ranking each proposal. It is a simple, reliable method, easily understood and very flexible and versatile in its applications.

### Economic Life

The concept of economic life is the cornerstone of equipment replacement philosophy. It is not new in any sense of the word, but its nature is youthful and full of energy. The concept of economic life has two major effects on replacement policies: first, it points out the fact that a machine does not have to be old or deteriorated to be uneconomical and, second, that a machine should not be kept in service beyond its economic life. A machine has many lives: physical, tax and economic. The physical life may be twenty years, the tax life twelve years and the economical life eight years. Optimum equipment economy

requires replacement at the end of eight years or as soon thereafter as possible. The economic life of a machine is the period over which a machine is not seriously challenged by another. It is the period during which the machine is economically superior to any other machine. The determination of a machine's theoretical economic life can be shown graphically as in Exhibit 1.

CHART OF THEORETICAL ECONOMIC LIFE




C= (A + B) average total owning and operating costs for "n" years
B= Average annual operating costs for "n" years
A= Average annual capital recovery cost for "n" years

* (The chart, if not reproduced accurately, has a tendency to confuse some readers. The co-ordinate values of the curves are more important than the shape, in this case.)

**EXHIBIT 1**

The cost of owning and operating a machine is composed of two major elements: ownership costs and operating costs. Ownership costs (Curve A on the chart) reflect the year-to-year loss in market value and the interest (assumed to be 6 per cent for illustration purposes) which could have been earned had the money been invested elsewhere. Example: A #0 automatic screw machine is purchased for $11,000. One year later its value on the used machinery market is $7,060 and the 6 per cent interest forfeited on the $11,000 equals $660; the $4,600 difference ($11,000 — 7,060 + 660) is the "cost of ownership" for the first year as indicated by the first point on Curve A. During the

second year the market value decreases by $1,776 and the interest on the sum invested at the beginning of the year equals $424 ($7,060 × 6%) for a second-year ownership cost of $2,200. The total cost for two years is $6,800 and the two-year average is $3,400 per year, the second point on Curve A. This curve then represents the average annual cost of ownership (loss in market value and forfeited interest) for different periods of time. Looking at this curve alone, it appears that, if the machine is kept for 18 years, it will cost an average of $1,500 a year.

However, the costs of operating the machine must also be considered (Curve B). Operating costs tend to increase with age rather than to decrease as ownership costs do. Example: for the first year the operating costs amount to $600 —the cost of routine maintenance, property taxes, tax-deductible depreciation allowances (a savings), etc. As a machine gets older, it begins to need periodic overhauls and technological advances make it even more costly to operate. At the end of eight years a total of $8,000 will have been spent on the machine, or an average of $1,000 a year. If the machine is kept for eighteen years, the cost of overhauls, lost production time, scheduling, inflexibility, and out-dated, slow and inefficient methods, etc., mount up to an average cost per year of $2,500.

Curve C is the sum of A and B and is the total average annual cost for owning and operating the machine. Example: over a period of five years, the machine cost the company a total of $15,000 or an average of $3,000 a year. Inspection of the graph shows that, if the machine is replaced at age seven or eight, it will have cost only $2,800 for each of the seven or eight years. If, however, the machine is kept until it is eighteen years old, it will cost the company $4,000 a year—a $1,200 premium being paid without any increase in service. The economic life of the machine is seven or eight years; it is at this point that maximum value is received from the dollars invested. To retain the machine beyond this point is to dilute the return on the money invested.

Application of the economic life philosophy is, at best, a first approximation of economical replacement. The true economic life of a specific machine can never be known except in retrospect, because it depends on cost history. Practical application involves the accumulation of cost throughout the lives of a group of similar machines and then plotting a typical cost history for the group. The assumption that a new machine will follow the same cost history as its predecessor must be exercised with caution and must be revised from year to year. Usually, though, this assumption brings about a greater reliability in forecasting costs than no assumption at all.

A generalization can be drawn from the curves that a typical machine of this type should be replaced every seven or eight years. The generalization can be confirmed by conducting an engineering economy study to determine the rate of return on an investment in a new model. For the cost conditions used to illustrate the economic life of this machine, the rate of return on replacing the machine every eight years would be approximately 7½ percent. Assuming that a new machine could be purchased and operated for eight years at an average annual cost of $2,800, any existing machine that is anticipated to cost more than that amount next year should be replaced (assuming that the costs continue to rise each year thereafter).

### *Profit-Maintaining or Profit-Adding*

An important facet of re-equipment economics is the differentiation between maintenance and expansion investments; they are different and should be evaluated differently for budget planning purposes.

A profit-maintaining investment is made for the purpose of maintaining the *status quo*. Replacement of existing equipment which is obsolete or deteriorated, improving existing equipment to keep ahead of competition, purchasing new equipment which is essential for the continuation of existing facilities, are all profit-maintaining investments. The majority of re-equipment proposals are for the purpose of maintaining present profit levels and preventing a dilution of earnings. As such, re-equipment investments are not actually capital investments but a form of "long range operating expense." Each year management budgets a certain amount of working capital for factory operations—raw material, wages, salaries, supplies, etc. A five year re-equipment "expense" budget should be initiated and considered a mandatory operating expense. Management must maintain the channels through which the profits are made, preferably at minimum costs.

A profit-adding investment is made for the purpose of bettering the profit position of a company. These investments include purchases which provide new business and expansion into new fields. Instead of maintaining an existing profit margin, these investments normally result in larger profit margins and usually have a higher investment risk than profit-maintaining investments.

Even though re-equipment proposals fall into both categories and often overlap, they should be considered to have about equal risk and should be ranked by their respective rates of return when competing for funds. A cautious evaluation of risk is called for in both cases before a proper decision can be rendered.

### *Use of the Rate-of-Return Index*

The calculation of a reliable rate of return on an equipment replacement proposal is but a part of the replacement program cycle; that rate of return must be correctly interpreted, a decision made, and positive action taken before the cycle is completed. The interpretation of when a rate of return reflects a profitable venture and when it does not a matter of considerable controversy. Some authorities attempt to establish hard and fast rules based on the cost of borrowed money or on a company's "rate of return on total investment." Inasmuch as a rate-of-return index is intended to assist management in making immediate decisions, whether or not it is satisfactory depends, among other things, on current economic conditions. Hence, a flexible set of rules is desirable. It is of vital importance to an economical replacement program that realistic minimum acceptable rates of return be written into the governing policies.

There are actually several minimum acceptable rates of return which should be used and understood. They are presented as "qualification requirements" for an investment proposal. A profit-maintaining proposal must meet the first minimum qualifying rate in order to be considered for an appropriation or for the budget. A profit-adding proposal must meet a minimum rate of return commensurate with the risk involved. The fact that a proposal qualifies does not insure its absolute profitability, since the availability of other profitable opportunities and the availability of capital must also be taken into account. Submitting all proposals which are profitable in an absolute sense better informs management of the total state of equipment efficiency and economy; it allows management personnel to make better decisions on whether capital should be plowed back into expansion or used to maintain existing facilities. Knowing the extent of "absolutely" profitable investment opportunities, management can then choose proposals which are profitable in a relative sense (a 25 per cent rate of return is "not profitable" if a 35 per cent rate of return is available and capital is limited).

If all capital were "free", then any proposal offering a rate of return after taxes over zero would be profitable (absolute). Capital is not free, however, and a premium must be paid to borrow money or to issue stock. A profit-maintaining proposal must at least earn the cost of capital to be profitable. This is the minimum absolute acceptable rate for any proposal. The cost-of-capital rate must be established with extreme caution, since the basis for computing a rate of return on investment by financial accounting methods can be incompatible and incomparable with the basis for computing a rate in an engineering economy study. Care must be taken to compare identical units (net

income/total sales cannot be used to establish a minimum standard for a rate of return based on the ratio: actual dollar savings/actual dollars invested).

In the example used to illustrate the concept of economic life, it was found that the least expensive replacement policy for A #0 automatic screw machine is to replace every seven or eight years at about a 7½ per cent return on the investment. If a company's earnings rate (net income/total assests) is assumed to be 10 per cent, there is a tendency on the part of some managers to say that a 7½ per cent return on a profit-maintaining proposal would tend to dilute the earnings rate. This is not true. The net effect of replacing on an economic life basis is to strengthen a company's earnings rate. The apparent inconsistency arises out of the fact that a replacement rate of return is based directly on a single appraisal, while a company earnings rate is indirectly based on a multitude of intertwining factors, including pricing policy and sales volume.

In addition to meeting the cost of capital requirement, a profit-adding proposal must meet the true company earnings rate on assets employed, to avoid a dilution of its earning power. When adding a new product line, expanding into new fields, or merging with another company, the entire profit picture must be taken into account; it is a considerably more complex proposal than the replacement of a specific machine. Consequently, the net effect of the added income must be carefully evaluated against the investment required to produce that income. Here, a company earnings rate provides a realistic guide to the net profitability of the venture if computed on a compatible basis with a rate of return. In order to be compatible, a company earnings rate should be computed after taxes and should reflect the ratio of net income to the market value of the total assets. Since the actual market value of equipment would be difficult and expensive to determine, a reasonable approximation of the appraised value can be effected, using total assets after depreciation. The company earnings rate qualification for a minimum acceptable rate of return should apply only to profit-adding proposals.

All proposals should meet a flexible minimum acceptable rate commensurate with the risk involved and all proposals are subject to the limitations of available capital and the merits of other competing proposals. The minimum acceptable rates are established by management to guide it in the budgeting of funds. Example: If 1959 were scheduled to be an expansion year, management might arbitrarily set a minimum acceptable rate of 15 or 20 per cent for all profit-maintaining proposals so that the less profitable proposals would be deferred until next year, leaving more capital available for 1959. Or perhaps the risk involved in entering a new field is too high for the company earnings rate to be a satisfactory guide. These rates are relative standards reflecting special

conditions and should not be confused with the absolute profitability of the proposal.

A rate of return on investment is not always what it appears to be at first. Maximize the value received from replacement investments by investigating the minimum acceptable rates to see if they measure what you want them to measure and that they are computed on the same basis as the engineering economy study.

### Evaluation of Risk

The evaluation of risk is one of the most important functions of management. To say that a re-equipment proposal having a 40 per cent rate of return is automatically profitable would be misleading; a rate of return without an evaluation of the risk involved is incomplete. Once a proposal has been judged as offering a satisfactory rate of return, it must be submitted to management for risk evaluation. Purchase of manufacturing equipment does not usually have as high a risk factor as the purchase of a new business or general expansion projects. However, re-equipment proposals should be evaluated on the following factors:

1. Anticipated changes in price trends. Increasing labor, materials and manufacturing costs favor re-equipment as do high trade-in values and increasing costs of new equipment.
2. Anticipated changes in the future level of operations (volume, number of shifts, hours per shift, etc.). A trend toward increased operations is favorable to re-equipment.
3. Availability of capital relative to the company's demand for capital.
4. Effect of new product developments and future product requirements.

A good economy study will absorb most of the risk related to the life of the investment into its rate of return. Example: Special tooling or special-purpose machinery would have to show a satisfactory return based on the time it is anticipated to be utilized.

### Planning and Budgeting

Planning and budgeting for replacement also form an integral part of a complete equipment control program. Replacement of most equipment can and should be planned for. By applying economic life data, a five-year schedule of expected replacements can be established. Having this list, management can budget accordingly and be fully confident that it has full control of the situa-

tion. A replacement budget should include a definite sum to take care of all profit-maintaining proposals and a variable amount to take advantage of the big "juicy" cost reduction proposals which cannot be planned and for the profit-adding proposals.

The replacement of production equipment can seldom be avoided—only deferred. Why not do it economically?

## Is Your Company Ready for a Tax Supervisor?

by RALPH W. LUCKAMAN*

SEVERAL YEARS AGO, our company recognized the magnitude of the tax problem and designated a tax supervisor with responsibility for all tax work. Surely there can be no question in the minds of company executives and accountants that taxes of today are a far cry from yesterday, because the day after this article is written some tax decision may be made or a regulation issued by a Federal, state or municipal government which will seriously affect the tax position of a company, require rearrangement in accounting procedures, or require major policy changes by management. Federal and state court records contain many decisions which have been rendered against taxpayers, varying in amounts from a few dollars to hundreds, thousands, and even millions of dollars. Conversely, of course, there are many decisions which have been rendered in favor of taxpayers.

In the writer's opinion, management should begin to consider more seriously the implications of unwise decisions which may affect the tax expense or tax accounting procedure and take progressive steps toward achieving certain desired results:

1. Legitimate savings in taxes which may be effected by proper planning and analysis of each tax procedure now used by the company.
2. Surveys and analyses in new fields of tax saving potentials.
3. Proper tax accounting in order to protect a company from additional tax claims.

Surely, with an item of business expense so large—usually the largest of the entire business — management should see that the tax accounting job is properly administered. A tax supervisor is as important to proper administration of taxes as a technical man is to a company's research and engineering program. Our treasurer delegates to one person under his supervision the tax planning responsibility

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and reporting. The treasurer reviews and discusses with the tax supervisor all problems requiring managerial decisions. When the treasurer and tax supervisor deem it necessary, the company's tax attorneys are consulted for interpretations and opinions. In this manner, our tax supervisor alerts management to possible unfavorable tax situations before they occur, in order that timely preventive action can be taken.

At present time about fifty per cent of the tax supervisor's time is spent on tax work and the other fifty per cent is spent on budgets and analytic work. Perhaps the time devoted to taxes is not entirely adequate but we feel that an attempt has been made to meet the problem which undoubtedly exists in many companies. It can be expected that with the growth of our company and, as tax problems become more complex, a tax supervisor will be required on a full-time basis. The important thing is that tax accounting as a separate responsibility has been recognized by our company's management.

A company which has divisions, subsidiaries, branch sales offices, warehouses, distributors, etc., not to mention the many other situations which bring special tax problems, such as depletion, export business, etc., certainly requires more than a passing glance at the tax situation. It is felt that a tax supervisor, experienced in general accounting, has an advantage over others, in that he will regard almost every company decision or accounting procedure as a challenge to test the tax implications involved.

In addition to the possibilities for tax savings, there are other benefits to be derived through channeling tax work and problems through one person. For example the preparation of unnecessary tax schedules and detail work by the accounting department can be eliminated. The tax supervisor will request only those figures which are really necessary to support the various returns. Also proper follow-up on report filing and tax payments becomes a simple matter if only one person is responsible for them.

An example of tax savings effected after installation of our plan is as follows. When the Federal gasoline tax went to three cents a gallon several years ago, the average company, although concerned about the increase, may have failed to realize that there was a clause inserted which, in effect, read that the additional one cent is refundable if the gasoline is not used upon the public highways. A tax supervisor trained in the interpretation of tax laws and the tax services would immediately react to the above mentioned law by asking himself questions such as:

1. Does this apply to our company?
2. If the act applies, to what extent?

3. Is it worth our time to keep certain additional records in order that we may take advantage of the opportunity for refund? Or should we merely change some of our present record-keeping procedures on gasoline used?

In our case, there are many gallons of gasoline used in machines and vehicles which never leave the premises, such as lift trucks, gasoline motors, pumps, trucks, tractors, shovels, cranes, mowers, light plants, chain saws, etc. A review of the potential savings was made by the accounting department and we are regularly filing the claims for refund as allowed by law.

Other savings may be effected by a tax supervisor in the field of state taxes. A person experienced in tax work will find legitimate avenues of relief from some of the state tax laws. State laws and regulations are many and varied and a regulation in one state concerning a certain subject may not have the same meaning as a regulation on the same subject in another state. State income tax forms vary. Some states allow Federal income tax as a deduction in computing the state income. It behooves the company to make sure that all deductions allowable by law are reported and that income which is exempt is excluded.

Likewise, in the field of sales taxes, there are potentially substantial tax savings. The tax supervisor should review the accounting records with questions such as the following in mind:

1. Are we paying sales tax on items purchased which should be exempt because they are incorporated into the product?
2. Is a transaction an Interstate Commerce transaction?

Companies doing business in foreign countries want to take advantage of all available tax benefits. A tax supervisor will study the problems connected with foreign tax credits and make sure that his company is taking advantage of all the allowable foreign tax credits.

Under the plan outlined in this article, it is not necessary for everyone connected with accounting to ponder the many tax services. If a problem develops, it is called to the attention of the tax supervisor for his recommendations. By the same token, if a new tax regulation or decision comes to the attention of the tax supervisor through the tax services, it is called to the attention of the treasurer or the accounting supervisor to obtain maximum benefits.

# A Proposal to Improve Accounting Education by Certifying Industrial Accountants

by GEORGE J. KALCIK

SEVEN YEARS AGO the first phase of study and research interest on the part of the writer in the general accounting training area was set forth in an article entitled "Do Our Schools Turn Out Industrial Accountants?" *NACA Bulletin*, September 1951. The project seemed to be slightly in advance of its time, if one were to judge the results from the minor amount of comment that it bestirred. With the passing of a few years, the original concept seemed to take on a substantially different complexion. In order to present the case, as it now appears, I will do so by the process of reviewing the background of the many factors attached to the ultimate realization of a program which would result in the new professional title of "certified industrial accountant."

## The Obstacles — and the Challenges

Most of the modern universities and colleges seem to adhere to a rather standardized alignment of subject offerings in their accounting curricula. The emphasis during the first two years of undergraduate attendance generally stresses, and rightly so, the inculcation of certain of the liberal arts and the humanities. The struggle to elevate the standards of education in this respect is one of no mean proportions and not too often appreciated by those who eventually profit by the training.

The gradually weakening techniques of education on the secondary level during the past two decades has not made the task any easier. As a result, where undergraduate students should be delving immediately into the higher levels of learning, valuable time must be expended during the first year to bring them to the point at which they should have been upon graduation from high school. Thus, a valuable year is irrevocably lost. This is one of the obstacles to proper training that is receiving attention by those truly concerned. Because it entails reaching downward and below their sphere of direct influence, a material degree of success should not and cannot be expected in a few short years. It demands concerted effort on the part of all schools to break the "log-

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jam" at the lower levels before significant results can be realized beyond the secondary level.

Another obstacle is that of lack of current teaching material—good teaching material that is! To author a text requires a tremendous expenditure of time in research, compilation, writing, editing, and publishing. The time lag is such that it seems that, when the text is ready for publication, it has already become obsolete in part. Two factors contribute to this, first, heavy teaching loads on the shoulders of those who have both the ability and experience to properly author such a work and, second, lack of financial assistance to bring the publication promptly into the market. Perhaps it could be resolved that there is a lack of recognition of the need and from this stems the tentacles of lack of time, lack of money, and lack of incentive; thus, no results.

Program inadequacy should also be classified as an obstacle, not so much as to subject matter but as to time. In four years of study the student of today is expected to utilize to achieve the goal of "complete accounting training," he is required to select what amounts to basic training only in each of the accounting sub-divisions. Let this be agreed to as being or consisting of: techniques of record-keeping, cost accounting, financial accounting, and tax accounting. The somewhat inconsistent offering of governmental accounting would seem to properly take subordinate position. True, many educators would set forth additional basic elements of the accounting art as needed, but I feel that these are not capable of being supported by constructive argument. It amounts to just this: too much is attempted to be taught in too short a time!

There is no doubt in the writer's mind that those directly concerned with modern educational problems are striving valiantly to create solutions for the obstacles stated above (not a complete listing). It is apparent on every hand that the impetus popularly attributed to the surge of specialized training in the Soviet Union is spurring our own endeavors in the same direction. This is not a proper stimulus. Realistically it should be activated by a universal realization of the general "soft" attitude in primary and secondary education. Many changes are being effected daily to achieve the goal of better preparation for specialized training in the arts, but it is a slow and unappreciated fight.

But how does this affect our own small area of training—accounting? Will better basic knowledge and skill be sufficient in itself to bring the art up to its proper level of professional achievement? Will such improved techniques enable the student to develop a truly thorough basic skill in our present four-year schedules, even after such improvements are activated? Are our present texts and teaching methods capable of being geared to such a demand? Shall the improvements sought be evaluated by merely present-day needs only? Can we

give a straight-forward affirmative reply to any of these queries—and, if not, why not?

This is perhaps the place to comment upon the present lot of accounting textbooks. It is self-evident that a new approach to the text-book format must be sought out, and very soon! One of the more interesting practical ideas along this line is that new texts should be published in loose-leaf, ring binder or post type covers, with the added attraction of a revision supply service of inserts to keep the text current. The various business information services certainly have found this procedure both advantageous and lucrative. The appealing angle in this suggestion is that a text-book thus could become a handbook of always-current content. Another factor that weighs heavily in its favor is that authors can produce a much greater volume of good new material, because they would be concerned only with small changes and additions in the prior publications, thus materially reducing the time demand of editing revisions. Publication costs of "new" editions in this format should be lower and, thus, make the proposal more workable from that standpoint.

### *Specialization in Industrial Accounting*

Let it be supposed that all these challenges have been met—proper preparation prior to the college level, improved texts, improved teaching techniques—is the program now adequate, or merely improved? The conclusion can be but one, that is, improved but still inadequate. It does not take too much in the way of observation and study to realize that such educational training must be augmented in still another (and entirely different) direction, or perhaps it could be better stated that the scope of training must be not only enlarged but divided anew into two segments or areas, public accounting and industrial accounting.

One of the principal advantages in dividing the art into two distinct parts is that concentrated effort can then be directed to those individual accounting subjects which will permit the student to follow a clearly defined road toward a higher degree of specialized skill than that possessed by our present students at the time of their graduation. No longer would a student be somewhat prepared to enter either field (with the knowledge that specialized advance training would be supplied "on the job"), but he would be ready to enter into the arena of modern business with better basic skills, and more of them. Would not this situation be welcomed by both industry and public accountants?

At this point, let us take the specialized path of industrial accounting. It must be admitted that certain elements of the complex world of business within

the embrace of industrial accounting are never thrust upon the embryo accountant. Where, in all of his present training code, is he exposed to such matters as personnel problems, union labor relations, generic term awareness (such as in the field of engineering and chemistry) and so on? Does he even have an awareness that these exist? Should he not have at least a sympathetic recognition of these elements in order to eventually perform his duties in a truly well-rounded manner? Perhaps these thoughts approach close to the idealistic—until one takes the time to look around and test the validity of a proposal to give them concrete expression.

A specific instance might well illustrate that a definite weakness exists. In informal discussion before one of our meetings, a member pointed out the difficulty his (cost) department was experiencing in trying to complete the current budget estimates on schedule. He narrated vividly several examples of the stale-mates being encountered in the progress of the work—especially failure on the part of his accounting personnel to understand the colloquial and generally-used technical terms employed by the operating department supervisors. He was vehement about the apparent lack of training of his cost accounting staff members in the direction of wanting to learn these simple items of general plant knowledge. They seemed to be steeped in the idea of a rigid and infallible code of "it must be done according to the accounting tenets or it is not to be recognized at all." The various conferences with the department heads and personnel were conducted in a frigid atmosphere charged with a not-too-well-concealed mutual contempt. He felt that this type of misunderstanding is completely unnecessary and that, somewhere along the path of accounting training and education, an awareness of the skills, experience and peculiarities of other professions should be recognized and given respect.

His words left quite an impression upon the writer, indeed a lasting one! In the course of my public accounting practice, when confronted by the problem of apparent failure of a prepared budget to hold up under the test of time, the first phase of the investigation is always directed towards the possible existence of this type of misunderstanding. When found to be so, the recommendation that steps be taken to educate the embattled ones to effect a better understanding of each other's peculiarities and problems invariably resulted in a more co-operative attitude throughout the company and a big step toward solution of the problem.

### *Certification — A Needed Reward for Time and Effort*

As one progresses along this thought pattern, sooner or later he will come

to the realization that another consideration insidiously inserts itself into the overall picture—time! Is the four-year type course of sufficient length to accomplish a worthwhile result with the suggested improvements? We may have the new courses, new text-books, and a separated curriculum, but is even that enough? The enlargement of the curriculum is desirable, but does it not follow that the attractiveness of the industrial accounting career diminishes because the time required increases?

With loss of attractiveness, there is possible loss of numbers entering into the field. The profession could be losing a sizeable percentage of potential practitioners, thus defeating the prime purpose of developing increased manpower so sorely needed. With an accelerated pace of student learning requirements, the time element of four years would not only become comparatively short but even oppressively so. Students certainly would have to work harder, and how kindly would they take to that prospect? Further, would they sacrifice, willingly, a greater percentage of their "free time" in order to reach the level we then decree they must attain? Time—just how much is it worth to them and to their profession? Is it possible that the reward dangled before their eyes becomes too paltry for the efforts they will have to put forth?

Perhaps some of the unattractiveness could be dimmed by the possible adoption of not only the intensive and expanded curriculum in a four-year period but increasing the term of study to five years. The additional year has several points of appeal. It would eliminate the need for intense condensation of subjects, permit additional humanities electives, permit possible on-the-job training affiliations with business and industry, allow finer degrees of specialization, give the student another year towards full maturity, and slow the pace to a better learning assimilation position.

Whether the devotion is of energy in study or of time, the incentive to sacrifice to achieve a goal is very tangible to those who look to the eventual reward of being designated "certified public accountant." It holds out to them a promise of professional standing, so nothing seems too difficult and discouragement comes hard. There is the fulfilment of a promise that makes all the sacrifices seem worthwhile.

It is the writer's contention that the same professional designation goal should and must be made available to those choosing the path of industrial accounting. Why not a designation of "certified industrial accountant"? A designation such as this is only fair treatment of those who study along parallel lines; it would be the final ingredient to make the accounting profession a completely integrated one; it would strengthen it as it should be strengthened—by increased numbers, higher quality, and unanimity of purpose.

This article recognizes that "machinery" would be needed to establish the degree and qualifications for it, legal and academic. Their development and promotion would be no small task, but who can doubt that, if the goal is desirable, the means to it can be worked out?

## Educating the Accountant

by J. R. CARTER*

I WOULD LIKE to add my comments to that growing body of literature concerning the education of the accountant and his future. The subject has aroused much comment by educators, employers, and accountants, themselves. It appears to me that all of these commentators are probably in general agreement that the qualifications for a successful life of service by the accountant are the same qualifications that are required for any successful vocational or professional pursuit, that is, an alert mind trained by a broad liberal arts education coupled with highly specialized training and hard work. The differences of opinion among these various commentators appears to lie in the area of what the accounting curriculum should consist of at the undergraduate level.

This concern of the educator, the employer, and the accountant over the education of the accountant bodes well for the accounting profession. The triumvirate thus formed will ultimately determine the stature of the accounting profession. The educator will formulate the curriculum based on a make-up of the demands or requirements by the employer and the accountant, together with the educator's professional know-how as the catalyst. The demands or requirements of the employer, industry or public, connotes an interest in the recognition of the accountant as a vital member of company staff—a member who can qualify for management responsibility. The accountant is cognizant of the excellent progress which has been made by his relatively new profession and aspires to enlarge and add to that progress.

The educator, the employer, and the accountant could formulate a balanced educational program as follows: The educator could offer a broad program of social studies and the humanities, with particular emphasis on public speaking, literature, languages, and even grammar. Here, I believe, mathematics to include at least geometry, trigonometry, and algebra should be required for the benefit of the logic which mathematics teaches. In addi-

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tion, the technical training offered by the educator might well call for only 20 hours of accounting or at least a sufficiently broad coverage in accounting to expose the student to the accounting fundamentals. The employer should expect to provide more on-the-job technical training of his newly-hired graduate accountants, for it is with his employer that the graduate accountant would probably specialize in some particular phase of accounting and here he may learn while he practices. The graduate accountant also has a basic responsibility in this picture. He must realize that he will, in effect, be interning. In addition to the on-the-job training afforded by his employer, he should also participate in either night courses or correspondence courses to further his technical training.

One of the essential ingredients in our educational formula for success is an alert mind on which to build. Here the accountant should concern himself with the responsibility of attracting the better high school graduates as undergraduate students. Some progress has been made in this field. Most noteworthy of recent efforts is the American Accounting Association's publication "Young Eyes on Accounting." Also, in order to attract the brighter students, the accountant needs to sell himself as an individual and to do this he must have the proper personality and educational background. Even today, the accounting profession is not getting its share of properly qualified students. The other professions, such as engineering, law, and medicine seem to be doing a better job toward attracting capable students, even though the accounting profession has as much to offer in the form of a challenge and financial success as any other profession.

Obviously a good public relations program between the profession and the layman is a necessity. This need is further evidenced by the manner in which the practitioner of accounting is usually portrayed in most books, stories, and movies. He is usually pictured as a person with an introverted, adding machine type of personality. In order to overcome the public's distorted picture of the accountant, the latter must be educated and trained not only to serve his profession in a technical capacity but also to serve his fellow man in civic, church, and community responsibilities. Through these media the accountant will not only be a highly respected practitioner of his profession, but, more and more, he will become the manager of tomorrow's business and the leader of tomorrow's community; he will have a well rounded personality, know how to think logically, and how to effectively communicate with others.

# Training the Junior Industrial Accountant

by J. B. LOVELL*

I HAVE READ with interest the observations of Messrs. M. B. Greulach and L. Rignanese on how formal education for the accountant can be adapted to meet today's industrial and business needs, in their letter appearing in the January, 1958, issue of the *Bulletin* and entitled, "Joining Forces in Educating the Accountant." I agree with the authors that existing educational institutions cannot go much beyond the instruction of theoretical accounting principles.

As indicated in their letter, the problem method of teaching can give the accounting student some insight into practical situations faced by practicing private accountants. However, as they mentioned, there are so many different accounting systems that the college or business school cannot acquaint the student with any significant representative portion of practical accounting applications. One cause of such variation in accounting practices is the diversity of opinion among accountants on the theoretical treatment of business transactions. Also contributing to this situation are the many types of equipment available for processing accounting data and the varied requirements of management as to what services the accountant should render.

To qualify the junior accountant recently graduated from college or business school, for specialized or supervisory accounting duties, it is necessary that he be exposed to all the accounting practices utilized by his employer. It is also important to acquaint him with the departmental operations served by the company's accounting department. This orientation to accounting practices will be accomplished eventually through assignment of the junior accountant to specific jobs in each of the specialized accounting functions, i. e., general accounting, cost accounting, etc. during his first few years of employment. However, in taking so long to acquaint the junior accountant with all the practices, some of his potential would be lost because of unfamiliarity with the "whole picture."

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Another way to tackle this problem of training junior accountants is through a formalized on-the-job training program. Rotation of the trainee among the various accounting functions, with instruction and work assignments given by the supervisor of each function, will acquaint the trainee with accounting methods and give him some insight into problems arising in each area. Of course, the trainee in a program of this type does not "produce" as much as he would if assigned to a specific job. However, against this must be weighed the advantage of gaining a more thoroughly trained accountant within a shorter period of time (including specific experience after completion of the program). In addition, the trainee's fresh approach to existing systems and problems may result in valuable suggestions for improvement during his training and later after assignment to specific duties.

A program of this type, in which I am training, was instituted by Ansco Division of General Aniline and Film Corporation approximately two years ago. Ansco Division manufactures and distributes a complete line of photographic products, employing approximately 3,500 at manufacturing and distribution facilities in Binghamton, New York, and at branch distribution facilities in nine major cities throughout the United States, with one branch in Canada. For smaller companies, a formal training program might not be as practical or needed. A training program in which selected junior accounting personnel "understudy" certain accounting supervisors and specialists might best serve their needs.

Another type of training, employed by industrial organizations represented in this area, makes use of voluntary courses in accounting and related fields offered by the education departments of these organizations.

To meet their growing need for highly trained accountants, industry and business are increasingly adopting training programs of some type to develop their own accounting personnel. It has often been said, "There is no substitute for experience," and a varied experience is the most valuable. This is the kind of experience that can be acquired in a well organized training program.

# Beyond These Covers

## Books

### Cost Justification

*Herbert F. Taggart, School of Business Administration, University of Michigan, Ann Arbor, Michigan, 1959, 588 pp.*

Written in the interests of "intelligent compliance" with the Robinson-Patman Act, this volume (which is No. 3 of Vol. XIV of Michigan Business Studies) seeks to "array all of the recorded instances in which respondents to Federal Trade Commission complaints ..... have attempted to defend their pricing practices by presenting information about their costs." At least 27 cases are treated. Concluding chapters concern "The Rules of the Game" and "Cost Justification—Where Does It Stand?"

### Construction Accounting and Financial Management

*William E. Coombs, F. W. Dodge Corp., 119 West 40th St., New York 18, N. Y., 1958, 481 pp., $12.85.*

Comprehensive and with three reprints as appendices (on a job cost system, machine accounting, and "conflicting" methods of construction accounting), this text starts with discernment of "basic operational patterns" and "basic accounting patterns." Accounting is then treated in terms of the various operations engaged in by the contractor.

### Electronics Computers in Business

*Gardner M. Jones, Bureau of Business and Economic Research, Michigan State University, East Lansing, Mich., 1958, 105 pp., $3.50.*

Treated in relationship to the accounting function (which, itself, is the concern of the first two chapters) the electronic road to information for management is clearly depicted here in a virtually non technical approach.

### Management Audit Reports

*James J. Hickey, C.P.A., Kermar Publications, Stratford, Conn., 144 pp., $20.*

This book, a case study, contains 53 management reports covering subjects ranging from absenteeism to workmen's compensation insurance. Each report outlines the problems encountered in the study and the recommendations made by the consultant to reduce costs, strengthen controls and refine the system of accounting. Also included is a 183 point general management check list and rating sheet.

### Data Processing

*National Machine Accountants Association, Paris, Illinois, 1958, 412 pp., $10.*

Consisting of proceedings of the 1958 Annual Conference of the National Machine Accountants Association, this volume includes report of many specific electronic data processing installations and applications. Numbered among them are "storehouse material accounting with a 705," "general ledger accounting for motor freight," "a case study of R.A.M.A.C. installation for inventory" and "production control reporting on an I.B.M. 650 computer." Several more general papers in the data processing area, plus workshop seminars in training and planning, are reported.

### Noma Automation Bibliography

*Internal Office Management Association, Willow Grove, Penna., Paper Bound, 1958, 20 pp., $2.*

The period covered by this bibliography comprises the years 1953 to 1957. Articles, booklets and reports on office automation are listed in alphabetical-by-title order in one section, followed by a second section on books, similarly arranged. Each section is preceded by a publishers index, giving addresses.

### Accounting Trends and Techniques — 1958

*American Institute of Certified Public Accountants, 270 Madison Ave., New York 16, N. Y., 1958, 259 pp., $15.*

A twelfth edition, this "Survey of the accounting aspects of the annual reports of 600 industrial and commercial corporations" presents, as in earlier editions, outstanding features in published financial statement practice, classified and detailed. The data relate to fiscal years ending within 1957.

### Principles of Auditing

*Walter B. Meigs, Richard D. Irwin, Inc., Homewood, Illinois, Revised Edition, 1959, 820 pp., $9.*

Only the next to the last chapter of this volume deals with management problems and only the last chapter is devoted to internal auditing. The book, as a whole, proceeds item by item through the balance sheet and profit and loss statement which independent auditors must verify. Eight case studies follow the expository chapters.

### Audit Practice Case

*Robert L. Grinaker and Robert E. Seiler, Richard D. Irwin, Inc., Homewood, Illinois.*

This case material on legal size paper is bound (Acco fastener) in three parts—"instructions and working materials—current year," "books of account and business papers," and the "permanent file and working papers,—December 31, 1958." It involves a hypothetical Midwestern Valve Manufacturing Company.

### Joint Program to Improve Accounting in the Federal Government

This is a 10th annual progress report on the program identified in the title, covering the year, 1958, and it is communicated prefatorily on the joint letterhead of the Secretary of the Treasury, Director of the Bureau of the Budget and, Comptroller General of the United States (all Washington 25, D. C.). It is divided into a brief review of the 10 years of the program, "financial management developments of government-wide significance" during 1958, and reports on individual agency status and progress as related to the program.

### Evaluating and Using Business Indicators

*American Management Association, 1515 Broadway, New York 36, N. Y., 1959, Paper Bound, 160 pp., $3.75.*

Lower case completion of the title of this group of papers includes the words, "with special reference to the current economic outlook." The volume is also A. M. A. Report No. 25. The papers, originally presented at a special conference last fall, are twelve in number and are grouped under the headings "Evaluating and Interpreting the Indicators," "Using the Indicators in Industrial Forecasting" and "What the Indicators Indicate: Current Trends and Prospects."

### Decision-Making and Productivity

*Seymour Melman, John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y.*

"The politics of production is the subject of this book," which deals with worker, union, and management decision-making and their effect on productivity. A late chapter concerns "alternative cost of labor and machinery." Auto production provides the industrial background.

### Cost Reduction in Wire Communications

*Roy Stone, Christopher Publishing House, Boston 20, Mass., Second Edition, 1959, 350 pp., $10.*

Largely a review (and revelation to most) of the technological progress in, and available facilities suppliable by, the communications industry, this volume has as its objective "to bring enlightenment about the subject of telecommunications, the details of which are not normally publicized." Noting that telephone service is a monopoly, the author suggests that this underscores the desirability of "learning more about telephone apparatus and services with the view to reduc(ing) the annual expense and provid(ing) a much better grade of service."

### Techniques of Office Cost Control

*American Management Association, 1515 Broadway, New York 36, N. Y., 1959, Paper Bound, 110 pp., $3.*

Some 16 addresses originally given at an office management conference last fall are included in this "A.M.A. Management Report Number 26." The addresses are grouped under caption of "Programs and Practices," "Tools and Tactics" and "The Role of E.P.D.: A Company Study." The last-named group is further subtitled "From Customer Order to Annual Report: The Total Systems Approach to E.D.P."

## *Articles*

### Translating the Business Forecast into a Company Program—A Case History

*D. R. Gilmaster, Cost and Management, January, 1959,*

A rounded picture of both sales forecasting and action in the various cost areas to recognize future conditions is given in this article which relates to the affairs of a Canadian subsidiary of a well-known American company. A "presidential task force" was used in exploring cost reduction potentials. Cost analysis was freely utilized in appraising the situation.

### Costs and Inventory Values in the Glue Industry

*Moritz E. Pape, Accounting Review, January, 1959.*

Prefacing his paper with considerable (and interesting) industry and company background, the author of this article (also an N.A.A. author) deals with the cost factors which build up to inventory costs in the glue industry and with their assembly and distribution. The "by-product credit" to manufacturing cost is specifically treated. The article contains illustrative tables.

### The Battle of the Advertising Budget

*Millard J. Hookey and A. R. McCardell, Business Budgeting, January, 1959.*

This is a two-part paper in which the advertising and budget department viewpoints are presented by Messrs. Hookey and McCardell, respectively. Neither article is brief and the two are presented in parallel columns. However, the entirety is not a debate but two comprehensive pictures of the underlying advertising effort and how to channel and proportion it with skill and economy.

## ADDRESSES OF PERIODICALS

**Accounting Review**
*c/o Carson Cox, College of Commerce, Ohio State University, Columbus 10, Ohio. Single copy: $1.50*

**Business Budgeting**
*528 W. 12th Street*
*Covington, Kentucky*

**Cost and Management**
*13 Walnut St., South*
*Hamilton, Ont., Canada*
*Single copy: 50¢*

# Simplification of Petty Cash Distribution

by S. C. ANDERSON*

AT THE JOHNSON & JOHNSON PARENT COMPANY OPERATIONS at New Brunswick, New Jersey, expendable petty cash expenditures exceed $100,000 per year. These expenses are carefully controlled through rather strict limitation of approval authority and, under former procedure, were distributed to applicable codes under the company's chart of accounts, which has provision for 99 expense tail codes. These codes are used to differentiate the various types of expenses, such as salaries, payroll taxes, supplies, travel, miscellaneous, etc. With the exception of about six per cent of the dollar volume, the accounting distribution had been made through clerical summarization by hand. The other six per cent, which consisted of charges to mechanical jobs, was integrated into a tabulating operation which provided tabulated reports of material purchases, mechanical stock requisitions, and labor and burden expended on repair and maintenance jobs.

An accounting clerk who was responsible for the petty cash distribution submitted a suggestion that all petty cash distributions be obtained through tabulating equipment. Investigation indicated that the hand clerical summarization was more economical than a tabulating operation. This investigation did, however, highlight the clerical and tabulating costs being expended to distribute many thousands of petty cash vouchers. Were these costs justified? This was the next question.

Further investigation revealed that the six per cent of the dollar volume was being charged in small amounts to hundreds of mechanical jobs. Of the balance of 94 per cent of the dollar volume, 85 per cent was being charged to four expense tail codes (travel 44 per cent, miscellaneous 22 per cent, professional services 14 per cent, and supplies 5 per cent). The remaining 9 per cent was being distributed in small dollar amounts to 25 different expense tail codes. The situation was further complicated by the fact that each of the different expense tail codes could appear in as many as 100 departmental expense accounts.

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We reasoned that we were gaining nothing from the distribution of the 9 per cent because of the small dollar amounts. We determined that the 14 per cent being charged to professional services was in one department only and presented no distribution problems. The 44 per cent for travel was primarily automobile mileage charges for travel between various Johnson & Johnson locations within a radius of ten miles and day trips to such areas as New York City. The 5 per cent for supplies was so spread among departments that the amounts by department were very small. All the above facts seemed to indicate that the clerical and tabulating costs being expended to distribute petty cash were not producing worthwhile results.

We eliminated the tabulating cost by the simple expedient of issuing instructions that no petty cash voucher should be coded to a mechanical order. We obtained departmental acceptance that all such charges should be coded to the petty cash voucher maker's home department. In most instances, the accumulated mechanical job charges had ultimately been charged to the maker's home department so that the only change was to charge the departmental account direct. The summary of mechanical job costs no longer includes the petty cash purchases; however, the amounts are too small to have any effect in analyzing or controlling mechanical order costs.

A final step in greatly reducing the clerical time in petty cash distribution was to establish a separate expense tail code for petty cash. All petty cash expenditures are to be charged to this expense tail code with the proper departmental designation, with a very limited number of exceptions such as the professional services previously mentioned.

In addition to effecting clerical time reduction, we believe there will be a definite advantage to department heads in the reporting to them of all petty cash in one account. In this way, they can evaluate the impact of petty cash on their operations and take steps to curtail it in those instances in which it seems to be out of line.